374 1

DEPARTMENT OF THE AIR FORCE
AIR FORCE BASE CONVERSION AGENCY

File:
R.S. 21
MR 374

CERTIFIED MAIL--RETURN RECEIPT REQUESTED

11 Oct 95

FROM: AFBCA/SEP
1051 Shine Avenue
Myrtle Beach, SC 29577-1501

SUBJ: Unilateral Administrative Order (UAO)

TO: See Distribution

1. Attached is a copy of the UAO issued to the United States Air Force, Myrtle Beach Air Force Base (AFB), South Carolina, by the United States Environmental Protection Agency, Region IV.

2. All environmental work at Myrtle Beach AFB shall be performed pursuant to the terms and conditions of this Order.

3. If any party cannot perform their duties, responsibilities or obligations in accordance with the terms and conditions of this Order, such party shall provide written notice within 30 days of receipt of this copy of the UAO to Mr. Richard H. Williams, Jr., Site Manager, AFBCA/SEP.

4. For further information, contact Mr. Richard Souza (803) 238-6080 or fax (803) 828-4075.

Richard Souza
RICHARD SOUZA
Acting Site Manager

2 Attachments
1. UAO
2. Distribution List

374 0

File: 17G
R.S.

MYRTLE BEACH AFB
SOUTH CAROLINA

ADMINISTRATIVE RECORD
COVER SHEET

AR File Number 374

UNITED STATES

ENVIRONMENTAL PROTECTION AGENCY

REGION IV

IN THE MATTER OF: United States Air Force Myrtle Beach Air Force Base Air Force Base Conversion Agency Southeast Operating Location-P 1051 Shine Avenue Myrtle Beach, South Carolina 29577-1501 EPA I.D. # SC7 570 024 821 RESPONDENT	FINAL ADMINISTRATIVE ORDER Docket No. 94-04-R Proceeding under Section 3008(h) of the Resource Conservation and Recovery Act, as amended, 42 U.S.C. §6928(h).

I. JURISDICTION

1. This Final Administrative Order (Order) is issued pursuant to the authority vested in the Administrator of the United States Environmental Protection Agency (EPA) by Section 3008(h) of the Solid Waste Disposal Act, commonly referred to as the Resource Conservation and Recovery Act of 1976 ("RCRA" or "Act"), as amended by the Hazardous and Solid Waste Amendments of 1984, 42 U.S.C. § 6928(h). The authority vested in the Administrator to issue orders under Section 3008(h) of RCRA has been delegated to the Regional Administrators by EPA Delegation Nos. 8-31 and 8-32 dated April 16, 1985, and has been further delegated by the Regional Administrator for Region IV to the Associate Director, Waste Management Division on November 8, 1994.

2. This Order is issued to the United States Air Force ("Respondent"), the owner/operator of Myrtle Beach Air Force Base ("MBAFB") located at 1051 Shine Avenue, Myrtle Beach, South Carolina 29577-1501, (the "Facility"). This Order is based upon the administrative record compiled by EPA and incorporated herein by reference. The record is available for review by Respondent and the public at EPA's office at 345 Courtland Street, N.E., Atlanta, Georgia 30365.

11 Oct 95

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1051 Shine Avenue
Myrtle Beach, SC 29577-1501

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Attachment 2

3. Congress has specifically waived any claim or defense of sovereign immunity that might otherwise be available to Respondent regarding this Order. Pursuant to Section 6001 of RCRA, 42 U.S.C. § 6961, 42 U.S.C. § 6926, as amended by the Federal Facility Compliance Act of 1992, Pub. L. No. 102-386 (Oct. 2, 1992), Respondent is subject, and shall comply with, all Federal, State, interstate, and local requirements, both substantive and procedural, respecting the control and abatement of solid waste or hazardous waste disposal and management in the same manner and to the same extent, as any "person" under the Act is subject to such requirements. Such Federal, State, interstate and local substantive and procedural requirements referred to in the preceding sentence include but are not limited to all administrative orders and all civil and administrative penalties and fines.

4. On November 22, 1985, EPA granted South Carolina authorization to operate a hazardous waste program in lieu of the federal hazardous waste program pursuant to Section 3006(b) of RCRA. In addition, on November 8, 1985, U.S. EPA published a notice in the Federal Register (see 50 Fed. Reg. 46,437 (Nov. 8, 1985)) regarding authorization of South Carolina to administer certain specified amendments to the RCRA program required as a result of the Hazardous and Solid Waste Amendments of 1984 (HSWA). The State, however, is not authorized to enforce RCRA § 3008(h) in lieu of EPA.

II. STATEMENT OF PURPOSE

1. This Order is being issued to protect human health and the environment from releases of hazardous waste, as defined by Section 1004(5) of the Act, 42 U.S.C. § 6903(5), 40 C.F.R. § 261.3, and hazardous constituents, as listed in 40 C.F.R. Part 261 Appendix VIII, or identified in 40 C.F.R. Part 264 Appendix IX, at or from Respondent's Facility.

2. This Order covers corrective action for releases or potential releases from units in which solid wastes were managed. Such a unit is denoted by EPA as a Solid Waste Management Unit ("SWMU"), which is defined as any discernible unit at which solid wastes have been placed at any time irrespective of whether the unit was intended for the management of solid or hazardous waste. This Order also covers the further investigation of any Area of Concern ("AOC"). An AOC is defined as any area of the facility under the control or ownership of the owner or operator where a release to the environment of hazardous waste(s) or hazardous constituents has occurred, is suspected to have occurred, or may occur, regardless of the frequency or duration of the release.

3. The issuance of the Order requires the Respondent (1) to perform RCRA Facility Assessments (RFA) on newly discovered SWMUs; (2) to perform confirmatory sampling to determine whether

a release of hazardous wastes has occurred and the environmental media affected; (3) to perform a RCRA Facility Investigation (RFI) to determine fully the nature and extent of any release of hazardous wastes at or from the Facility; (4) to perform Interim Measures (IM) to relieve threats to human health and/or the environment; (5) to perform a Corrective Measures Study (CMS) to identify and evaluate alternatives for the corrective measures necessary to prevent, mitigate, and/or remediate any releases of hazardous wastes or hazardous constituents at or from the Facility and to identify the most environmentally beneficial corrective measure(s); (6) to implement the corrective measure or measures selected by EPA at Facility; (7) to describe the current status of each SWMU and develop a comprehensive schedule for the implementation of the Work to be Performed under this Order and assess the need for interim measures; and (8) to perform any other activities necessary to correct or evaluate actual or potential threats to human health and the environment resulting from the release or potential release of hazardous wastes or hazardous constituents at or from the Facility.

III. PARTIES BOUND

1. This Order shall apply to and be binding upon Respondent and Respondent's present and future officers, officials, employees, agents, successors, assigns, and all other persons including, but not limited to, firms, corporations, parent companies, contractors, independent contractors, subcontractors, or consultants who act for, are owned by, or are in an agency relationship with the Respondent, and who conduct, monitor or perform any work pursuant to or required by this Order. Respondent shall not assign any of the requirements of this Order to any person or entity.

2. No change in ownership status relating to the Facility will in any way alter Respondent's responsibility under this Order. Any conveyance of title, easement, or other interest in the Respondent's Facility, or a portion of the Respondent's Facility, shall not affect Respondent's obligations under this Order. Respondent will be responsible for and liable for any failure to carry out all activities required of Respondent by the terms and conditions of the Order, regardless of Respondent's use of employees, agents, contractors, or consultants to perform any such tasks. It is the intent of the parties that the implementation of this work will not result in duplication of work performed by Respondent pursuant to other statutory authorities.

3. Respondent shall provide a copy of this Order to all contractors, laboratories, and consultants retained to conduct or monitor any portion of the work performed pursuant to this Order within 14 calendar days of the effective date of this Order or

the date of retention, and shall condition all such contracts on compliance with the terms of this Order.

4. Respondent shall give written notice of this Order to any successor in interest prior to transfer of ownership or operation of the Facility or a portion thereof and shall notify EPA at least thirty (30) calendar days prior to such transfer.

IV. FINDINGS OF FACT

1. Respondent is a "person" as defined by Section 1004(15) of the Act, 42 U.S.C. § 6905(15). In October of 1992, the Act was amended to specifically waive any claim or defense of sovereign immunity that might have otherwise been available to Respondent regarding this Order. Pursuant to Section 6001 of the Act, 42 U.S.C. § 6961, as amended by the Federal Facility Compliance Act of 1992, Pub. L. No. 102-386 (Oct. 2, 1992), Respondent is subject, and shall comply with, all Federal, State, interstate, and local requirements, both substantive and procedural, respecting the control and abatement of solid waste or hazardous waste disposal and management in the same manner and to the same extent, as any "person" under the Act is subject to such requirements. Such Federal, State, interstate and local substantive and procedural requirements referred to in the preceding sentence include but are not limited to all administrative orders and all civil and administrative penalties and fines.

2. Respondent is a "generator" of "hazardous waste" and the "owner" and/or "operator" of a hazardous waste management "Facility" located at 1051 Shine Avenue, Myrtle Beach (See Attachment 5), as those terms are defined at 40 C.F.R. § 260.10. Respondent engaged in treatment, storage, or disposal of hazardous waste at the Facility.

3. Specifically, Respondent discharged wastes generated at the Facility through oil/water separators to open earthen drainage ditches, disposed in landfills, burned in fire training exercises, and other on-site activities.

4. Respondent owned and/or operated the Facility as a hazardous waste management facility on or after November 19, 1980, the applicable date which renders facilities subject to interim status requirements or the requirement to have a permit under Sections 3004 and 3005 of RCRA.

5. Notification: Pursuant to Section 3010 of RCRA, 42 U.S.C. § 6930, Respondent notified EPA of its hazardous waste activity. In its notification dated June 27, 1980, Respondent identified itself as a generator of hazardous waste and an owner/operator of a treatment, storage, and/or disposal facility for hazardous waste.

6. Part A Permit Application: Pursuant to Section 3005(e) of the Act, 42 U.S.C. § 6925(e), on November 18, 1980, Respondent submitted to EPA its Part A Hazardous Waste Permit application. In this original Part A permit application, Respondent identified five treatment, storage, and disposal facilities on the base. These were:

Sewage treatment plant
Waste fuels storage area
Armaments shop
Base service station
Defense Reutilization Material Operation ("DRMO") storage area

7. In the November 18, 1980 Part A application, Respondent identified itself as handling the following categories of hazardous wastes at the Facility:

D001	F002
D002	F004
D009	U056

8. Interim Status: Pursuant to Section 3005(e) of the Act, 42 U.S.C. § 6925 and at 40 C.F.R. Sections 270.1(b) and 270.70(a), Respondent achieved "interim status" due to meeting the applicable requirements for interim status as described in paragraphs 3-6 of this section. Interim status facilities are subject to the regulations promulgated pursuant to Sections 3004 and 3005 of the Act, 42 U.S.C. §§ 6924 and 6925, which are codified in 40 C.F.R. Parts 260 - 265, 268 and 270.

9. Under Section 104 of the Comprehensive Environmental Response, Compensation, and Liability Act 42 U.S.C. §§ 9601 et seq., (CERCLA) and Executive Order 12580, Respondent is authorized to take response actions with respect to releases or threats of releases of hazardous substances, pollutants or contaminants. Hazardous substance is defined in Section 101(14) of CERCLA, 42 U.S.C. 9601(14).

10. Pursuant to CERCLA, Respondent initiated the Installation Restoration Program (IRP) in 1981 at the Facility. As of August 1995, investigatory activities have commenced at 254 SWMUs, 115 SWMUs have been determined to require no further action, a response action has been completed at one IRP site (SWMU #143) and response actions have been initiated at one other IRP site (SWMU #40). No other decision document has been issued to date, and no other IRP sites have been remediated. The IRP was a voluntary investigatory and cleanup program implemented under Section 120(a)-(e) of CERCLA, 42 U.S.C. 9620(a)-(e). Investigations previously performed at the Facility under the IRP are labeled "Preliminary Assessment/Site Investigations (PA/SI)"

and "Remedial Investigation/Feasibility Studies (RI/FS)." PA/SI investigations are roughly equivalent to Confirmatory Sampling (CS) under the RCRA Corrective Action program and RI/FS investigations are roughly equivalent to RCRA Facility Investigations (RFI) and Corrective Measure Studies (CMS). Previous PA/SI and RI/FS investigations done under the Facility's IRP will be used to satisfy the requirements of the RCRA Corrective Action program, to the extent that they meet the objectives of the corresponding RCRA investigation.

11. According to the March 1994 BRAC Cleanup Plan, Respondent identified fifteen sites requiring evaluation during early stages of the IRP initiated in 1981, and more recently, Respondent identified ten additional IRP sites. On April 10-12, 1990, EPA contractor AT Kearney conducted a Visual Site Inspection (VSI) of Respondent's Facility. During the VSI, 132 SWMUs and four (4) Areas of Concern (AOCs) were identified. The results of the inspection were documented in a draft RCRA Facility Assessment (RFA) report dated July 6, 1990. The final RFA Report for MBAFB was prepared under the Joint Management Initiative by EPA, SCDHEC and MBAFB in October 1991. The Final RFA Report identified 140 SWMUs and 4 AOCs. Both the draft and Final RFAs identified SWMUs and AOCs requiring further investigation. Further, subsequent to the Final RFA, the Air Force identified forty eight (48) additional SWMUs and EPA added sixty two (62) septic tanks to the number of SWMUs that EPA determined required further evaluation. A total of 254 SWMUs (including the 4 AOCs which have since been determined to be SWMUs) have been identified to date.

12. On May 8, 1991, Respondent notified the State of South Carolina of its intent to terminate Interim Status. South Carolina's Department of Health and Environmental Control ("SCDHEC") requested an amended closure plan on June 20, 1991, and approved Respondent's Interim Status storage unit(s) closure plan for the Waste Fuels Storage Facility (WFSF) (SWMUs #18-26) and the Defense Reutilization and Marketing Office (DRMO) (SWMUs #27-30) on May 7, 1993. Closure standards in 40 C.F.R. § 265.113(b) require completion of closure within 180 calendar days after the date of final receipt of waste or 180 calendar days after approval of the final closure plan, whichever is later. On June 12, 1995, Respondent submitted a revised final closure plan for the DRMO, which was approved by SCDHEC on July 18, 1995. On May 25, 1995, Respondent submitted a revised final closure plan for the WFSF, which is currently pending approval by SCDHEC.

13. Summarized below are the SWMUs which require an RFI, confirmatory sampling or other additional investigation or work (as indicated) in order to determine whether a response action is necessary and to meet the objectives set forth in Section II, above.

a. Pursuant to the requirements of Section VII: Work to be Performed, Respondent shall conduct a RCRA Facility Investigation (RFI) or confirmatory sampling for the SWMUs discussed below. Lists of these SWMUs are located at Attachment 6, Tables 1 and 2.

SWMU #1: Landfill #1

SWMU #1 is a 600,000 cubic yard, unlined, 9 acre trench and burn landfill which operated from 1955 to 1960. The trenches were 16 feet wide and five to ten feet deep (trenches were excavated until groundwater was reached.) SWMU #1 managed general refuse generated by base activities. This included both non-hazardous wastes and hazardous wastes such as waste oils and solvents. There were no weathering pits (see description of SWMU #6) in existence while this unit was operating, therefore it is likely that used fuel filters, oil booms, waste oil and solvents were disposed of in the unit, although this cannot be verified. It now underlies the Base Golf course along the 3rd fairway in the northeast corner of the base. There is a pond located adjacent to the landfill which was created during construction of the golf course. It collects rain water and surface water run-off which is used in the golf course sprinkler system. During the VSI, surface refuse was observed on a mound adjacent to the pond. Releases of hazardous constituents have been discovered in groundwater monitoring wells installed under the Phase II IRP for both this SWMU and SWMU #4. Hazardous constituents include benzene (0.006 mg/l), toluene (0.006 mg/l), 1,2-trans-dichloroethylene (0.003 mg/l), and chlorobenzene (0.003 mg/l). The Remedial Investigation/Feasibility Study (RI/FS) was initiated in 1991 and field work commenced in the summer of 1993. As of August 1995, the draft RI/FS report has been submitted to EPA. SWMU #1 requires the completion of an RFI.

SWMU #2: Landfill #2

SWMU #2 is a 500,000 cubic yard, unlined, 6 acre trench and burn landfill which operated from 1960 to 1964. SWMU #2 managed general base refuse generated by base activities. This included both non-hazardous wastes and hazardous wastes such as waste oils and solvents. There were no weathering pits in existence while this unit was operating, therefore it is likely that used fuel filters, oil booms, waste oil and solvents were disposed of in this unit, although this cannot be verified. Groundwater was encountered while digging the trenches, and it's probable that hazardous constituents were discharged to the groundwater as a result of these practices. Occasionally, barrels of waste oil and solvents were disposed of in SWMU #2. The unit is located on what used to be swampland. The eastern portion of this unit was used for contractor storage and for hardfill. A drainage ditch running from south to north along the west edge of the landfill drains to the Intercoastal Waterway. As of August 1995, portions

of the draft RI/FS report have been submitted to EPA. SWMU #2 requires the completion of an RFI.

SWMU #3: Landfill #3

SWMU #3 is a 300,000 cubic yard, unlined, 12 acre trench and cover landfill which operated from 1964 to 1968. The cover trenches were approximately ten feet deep. SWMU #3 managed general refuse generated by base activities. This included both non-hazardous wastes and hazardous wastes such as waste oils and solvents. There were no weathering pits in existence while this unit was operating, therefore it is likely that used fuel filters, oil booms, waste oil and solvents were disposed of in the unit. Grease and scum from anaerobic digesters were disposed in SWMU #3 in 1976. In 1981 some contaminated soil was removed from this unit. SWMU #3 is located due north of SWMU #2. SWMU #7 (weathering pit #2), overlies a 50 foot by 55 foot area on the southern edge of the unit. A drainage ditch running east to west along the southern edge of the unit empties into a larger drainage ditch, which runs north to the Intercoastal Waterway. During periods of wet weather, leachate has been observed entering the drainage ditch from this unit. A light, oily sheen was observed on the water in the drainage ditch during VSI. Volatile organic compounds that been detected in groundwater monitoring wells installed under the phase II IRP for both this unit and SWMU #7 include: benzene, toluene, ethylbenzene, chloroform, chloroethylene, methylene chloride, 1,2-dichloroethane, trans-1,2-dichloroethylene, chlorobenzene, and 1,1-dichloroethane. The RI/FS was initiated in 1991 and field work commenced in the summer of 1993. Portions of the draft RI/FS report were submitted to EPA in January 1995. SWMU #3 requires the completion of an RFI.

SWMU #4: Landfill #4

SWMU #4 is a 500,000 cubic yard, unlined, 9 acre trench and cover landfill which operated from 1968 to 1972. SWMU #4 managed general refuse generated by base activities. This included both non-hazardous wastes and hazardous wastes such as waste oils and solvents. There were no weathering pits in existence while this unit was operating, therefore it is likely that used fuel filters, oil booms, waste oil and solvents were disposed of in unit #4, although this cannot be verified. SWMU #4 now underlies the Base Golf Course between holes #2 and #7 in the northeast corner of the base. Leachate has been observed at the site during periods of wet weather. Groundwater monitoring wells installed under the Phase II IRP for both this unit and SWMU #1, detected low levels of benzene, toluene, 1,2-trans-dichloroethylene, and chlorobenzene. The RI/FS was initiated in 1991 and field work commenced in summer 1993. Portions of the

draft RI/FS report were submitted to EPA in April 1995. SWMU #4 requires completion of an RFI.

SWMU #5: Landfill #5

SWMU #5 is a 250,000 cubic yard , unlined, 6 acre trench and cover landfill which operated from 1973 to 1974. This unit managed general refuse generated by base activities. This may have included some hazardous waste. The site received pavement, tree limbs, and miscellaneous metal debris after it was deactivated. It is located in the southeast portion of the base. As of August 1995, the RFI report has not been submitted to EPA. SWMU #5 requires an RFI.

SWMU #6: Weathering pit #1

SWMU #6 is a 300 square foot, 12 inch deep, unlined open earthen pit which was operated from 1973 to 1978. It is located adjacent to the Waste Fuels Storage Facility (WFSF). The pit was used for evaporating fuel soaked filters and oil booms. After the materials were dried, they were disposed of in a sanitary landfill. This site has been deactivated and regraded, and SWMU #8 (weathering pit #3) currently is located where this site used to be. During the VSI, a slight discoloration of the grass around the pit area was observed. Volatile organic compounds that have been revealed in groundwater monitoring wells installed under the Phase II IRP for this unit include benzene, ethylbenzene, chlorobenzene, toluene, and trans-1,2-dichlororethylene. The RI/FS was initiated in 1991 and field work commenced in summer 1993. As of August 1995, no RFI report has been submitted to EPA. SWMU #6 requires an RFI.

SWMU #7: Weathering pit #2

SWMU #7 is a 50 foot by 55 foot by 12 inch, unlined, earthen pit located on the southern edge of SWMU #3 (landfill #3) in the northwest corner of the base. The pit was in operation from 1979 to 1981. The unit was used for evaporating fuel soaked filters and oil booms, and may have received other oils, solvents, and paint thinners. After the materials were dried, they were disposed of in a sanitary landfill. In 1981/82, approximately 21,000 gallons of oil contaminated water and 240,000 gallons of digested sludge and contaminated soil were excavated from SWMU #7. Soil that was determined to be less contaminated was mixed with clean soil and placed back in the pit as filler. During periods of wet weather, leachate has been observed entering the drainage ditch adjacent to this unit. A light, oily sheen was observed on the water in the ditch during the VSI. Volatile organic compounds that have been detected in groundwater monitoring wells installed under the Phase II IRP for both this unit and SWMU #3 include benzene, toluene, ethylbenzene, chloroform, chloroethylene, methylene chloride, 1,2-

dichloroethane, trans-1,2-dichloroethylene, chlorobenzene, and 1,1-dichloroethane. The RI/FS was initiated in 1991 and field work commenced in summer 1993. Portions of the draft RI/FS report were submitted to EPA in January 1995. SWMU #7 requires completion of an RFI.

SWMU #9: Fire training area #1

SWMU #9 is a 100 foot diameter circular earthen diked area which was operated from 1955 to 1960. Large amounts of waste fuels and chemicals were added to the sandy soil within the 12-18 inch bermed area, set on fire, and then extinguished. The fires were primarily fueled by a mixture of waste JP-4 fuel, waste oils, and waste solvents. It is located at the far west end of the old east-west runway. The area is currently a gravel parking lot. Groundwater monitoring wells installed under the Phase II IRP for both this unit and SWMU #10 detected low levels of benzene, chloroform, toluene, ethylbenzene, and chloromethane. The RI/FS was initiated in 1991 and field work commenced in summer 1993. As of August 1995, no RFI report has been submitted to EPA. SWMU #9 requires an RFI.

SWMU #10: Fire training area #2

SWMU #10 is a 100 foot diameter circular earthen diked area which was operated from 1960 to 1964. Large amounts of waste fuels and chemicals were added to the sandy soil within the 12-18 inch bermed area, set on fire, and then extinguished. The fires were primarily fueled by a mixture of waste JP-4 fuel, waste oils, and waste solvents. It is located at the far west end of the old east-west runway. The area is located adjacent to SWMU #9 (Fire training area #1), and is currently a gravel parking lot. Groundwater monitoring wells installed under the Phase II IRP for both this unit and SWMU #9 detected low levels of benzene, chloroform, toluene, ethylbenzene, and chloromethane. The RI/FS was initiated in 1991 and field work commenced in summer 1993. As of August 1995, no RFI report has been submitted to EPA. SWMU #10 requires an RFI.

SWMU #11: Fire training area #3

SWMU #11 is a 100 foot by 100 foot earthen diked area. It was operated from 1965 to 1969. Large amounts of waste fuels and chemicals were added to the sandy soil within the 12-18 inch bermed area, set on fire, and then extinguished. The fires were primarily fueled by a mixture of waste JP-4 fuel, waste oils, and waste solvents. Currently, the SWMU is overlain by a gravel parking lot. Groundwater monitoring wells installed under the Phase II IRP for this unit detected low levels of benzene, chloroform, toluene, ethylbenzene, chlorobenzene, 1,1-dichloroethane, chloromethane, and 1,2 trans-dichloroethylene. The RI/FS was initiated in 1991 and field work commenced in

summer 1993. Portions of the draft RI/FS report were submitted to EPA in February 1995. SWMU #11 requires the completion of an RFI.

SWMU #12: Fire training area #4

SWMU #12 is a 100 foot diameter circular sandy, unlined, earthen diked area, located approximately half a mile east of the main runway and north of South Road in the southeastern corner of the base, in the Forward Operating Location Training Area (FOLTA) area. This unit was used as a practice burning/extinguishing area. The area was first flooded with 1,500 gallons of water, then 300 gallons of JP-4 fuel was poured on top, ignited, and then extinguished. The area is underlain by drains which lead to SWMU #13 (oil/water separator). The unit was operated from 1970 to 1990. The RI/FS was initiated in 1991 and field work commenced in summer 1993. As of August 1995, no RFI report has been submitted to EPA. SWMU #12 requires an RFI.

SWMU #13: Oil/water separator in fire training area #4

SWMU #13 requires an RFI.

SWMU #14: Polishing pond

SWMU #14 is a 30 foot by 30 foot by 4 foot deep, open, unlined surface impoundment adjacent to Fire training area #4 (SWMU #12) in the southwest section of the base. This unit was operated from 1970 to 1990. The unit received discharges from the SWMU #13 (fire training area #4 oil/water separator), and collects rain water and surface water run off. During the VSI, stained soil and dead grass were observed along the banks of the pond. Additionally, there was a strong oily odor in the air around the unit. SWMU #14 requires an RFI.

SWMU #15: Drainage ditches

The ditches are unlined surface ditches that drain over 90 percent of the base, and have been in operation since 1973. They collect surface water runoff and discharges from the storm sewer system (SWMU #17) and the Waste Fuels Storage Facility oil/water separator (SWMU #24), as well as surface water runoff from surrounding land surfaces. The ditches are approximately five to ten feet deep, and generally contain small amounts of standing water. The ditches run in a network designed so that they converge with larger ditches that eventually discharge off base to either the Intercoastal Waterway or the Atlantic Ocean. Oil booms have been placed in the larger ditches to prevent petroleum based materials in the water from being discharged off the base. The ditches received various quantities of waste fuels, waste oils, solvent, acids, hydraulic fluids and other waste chemicals from spills and discharges from some areas of the base. At the

time of the VSI, an oily sheen was observed on the surface of water contained in many of the ditches. A Preliminary Assessment/Site Investigation (PA/SI) was initiated in 1991 and field work commenced in summer 1993 under the Installation Restoration Program. The PA/SI report has been completed and further investigation is planned. SWMU #15 requires an RFI.

SWMU #17: Storm sewer system

SWMU #17 requires confirmatory sampling.

SWMUs # 18-30: Waste Fuels Storage Facility (WFSF), SWMUs 18-26, and Defense Reutilization and Marketing Office (DRMO), SWMUs 27-30

SWMUs # 18-30 are the RCRA interim status units. SWMUs # 18-30 require RCRA Facility Investigations or equivalent investigations under State RCRA authority. Final closure of these units under State RCRA authority will complete Respondent's actions at these units.

SWMU #31: AGE (Aerospace Ground Equipment) storage yard

SWMU #31 is a 300 foot by 300 foot outdoor asphalt storage pad located between the AGE Shop and the Engine Shop which has been in operation since 1955. It is used for storing AGE equipment such as trailers, carts, and fuel bowers. Wastes that have been managed at this SWMU include aircraft cleaning fluid, hydraulic fluids, and waste oils. There are storm drains on the pad that lead directly to SWMU #15 (Drainage ditches). During the VSI, an oily sheen was visible on the pad and in the storm drains. A PA/SI was initiated in 1991 and field work commenced in summer 1993. The draft PA/SI report was submitted in September 1994. SWMU #31 requires an RFI and completion of confirmatory sampling report.

SWMU #32: AGE (Aerospace Ground Equipment) washrack

SWMU #32 is a 15 foot by 30 foot six inch thick, outdoor, partially diked concrete pad which has been in operation since 1955. This unit is used for cleaning ground equipment. The pad has curbing along its sides, except for the eastern side which is open. The pad is sloped towards the inlet to the AGE oil/water separator (SWMU #36) in the center of the unit. SWMU #36 releases its collected water to the sanitary sewer system (SWMU #16). Wastes received by the washrack include aircraft cleaning compound, hydraulic fluids, waste solvents, and waste oil. Prior to 1976 when the oil/water separator was installed, the unit discharged directly to SWMU #15 (drainage ditches) which eventually led to the Intercoastal Waterway or the Atlantic Ocean. Several cracks in the pad exposing the soil underneath were observed during the VSI. The washrack is located at the

western edge of the AGE storage yard (SWMU #31) at the south end of the flight line. SWMU #32 requires an RFI and completion of confirmatory sampling report.

SWMU #36: AGE (Aerospace Ground Equipment) oil/water separator, building 320

The RFA specified that an integrity evaluation is required. The Air Force removed the oil/water separator (OWS) in August 1994. A draft OWS Report was submitted to EPA in April 1995. Completion of the confirmatory sampling report (OWS Report) is required. An RFI is required.

SWMU #39: Solvent vat room, building 324

SWMU #39 requires an RFI.

SWMU #41: Former solvent vat room (building 324) oil/water separator current collection tank

SWMU #41 requires an RFI.

SWMU #46: Older engine test cell

SWMU #46 is a 40 foot by 60 foot outdoor, unbermed concrete pad located between taxiways C and D, directly east of the SWMU #44 (newer engine test cell), and has been in operation for an undetermined number of years. Engines that had been removed from their planes for maintenance or repairs are tested in this area. Oils and fuels discharged during engine testing are washed down into the drain in the center of the pad. The drain leads to SWMU #47 (older engine test cell oil/water separator). Wastes that have been managed in SWMU #46 include waste oils and waste JP-4 jet fuel. Several minor cracks were observed in the pad during the VSI. The draft PA/SI was submitted to EPA in September 1994. SWMU #46 requires completion of the confirmatory sampling report and an RFI.

SWMU #47: Old engine test cell oil/water separator, Facility 11302

The draft oil/water separator assessment report has been submitted to EPA. An RFI, to be done in conjunction with the RFI for SWMU #46, is required.

SWMU #48: Power check pad

SWMU #48 requires confirmatory sampling.

SWMU #49: Power check pad oil/water separator

A draft oil/water assessment report for SWMU #49 has been submitted to EPA. Confirmatory sampling is required.

SWMU #53: Fuels barn- fuel removal area

A draft integrity evaluation report has been submitted to EPA. SWMU #53 requires confirmatory sampling.

SWMU #54: Fuels barn- maintenance area

A draft integrity evaluation report has been submitted to EPA. SWMU #54 requires confirmatory sampling.

SWMU #55: Fuels barn- fuel removal area oil/water separator

A draft oil/water separator assessment report has been submitted to EPA. SWMU #55 requires confirmatory sampling.

SWMU #56: Fuels barn- maintenance area oil/water separator

A draft oil/water separator assessment report has been submitted to EPA. SWMU #56 requires confirmatory sampling.

SWMU #58: Hanger #1

A draft integrity evaluation report has been submitted to EPA. SWMU #58 requires confirmatory sampling.

SWMU #64: Corrosion control shop

A draft integrity evaluation report has been submitted to EPA. SWMU #64 requires confirmatory sampling.

SWMU #69: Hanger #2

A draft integrity evaluation report has been submitted to EPA. SWMU #69 requires confirmatory sampling.

SWMU #70: Hanger #2, oil/water separator 1

A draft oil/water separator assessment report has been submitted to EPA. SWMU #70 requires confirmatory sampling.

SWMU #71: Hanger #2, oil/water separator 2

A draft oil/water separator assessment report has been submitted to EPA. SWMU #71 requires confirmatory sampling.

SWMU #72: Hanger #3

A draft integrity evaluation report has been submitted to EPA. SWMU #72 requires confirmatory sampling.

SWMU #73: Hanger #3, oil/water separator 1

A draft oil/water separator assessment report has been submitted to EPA. SWMU #73 requires confirmatory sampling.

SWMU #74: Hanger, #3 oil/water separator 2

A draft oil/water separator assessment report has been submitted to EPA. SWMU #74 requires confirmatory sampling.

SWMU #79: Armament shop underground solvent storage tank

SWMU #79 is being investigated with SWMU #80. A PA/SI was initiated in 1991 and field work commenced in summer 1993. The draft PA/SI report was submitted to EPA in September 1994. SWMU #79 requires completion of the confirmatory sampling report and an RFI in conjunction with SWMU #80.

SWMU #80: Armament shop waste solvent storage area

SWMU #80 is a satellite accumulation area for storing waste solvents, contaminated rags, and waste oil generated by maintenance and repair activities on aircraft guns. The storage area is located on an unbermed concrete pad adjacent to SWMU #79 (former armaments shop solvent underground storage tank). Operations began at the armaments shop waste solvent storage area in 1983. Staining on the concrete pad and adjacent gravel was observed at the time of the VSI. Groundwater contamination with volatile organic compounds, including total 1,2-dichloroethene (8,500 ug/l), trichloroethylene (6,100 ug/l) and vinyl chloride (350 ug/l estimated) has been found. A PA/SI was initiated in 1991 and field work commenced in summer 1993. The draft PA/SI report was submitted to EPA in September 1994. SWMU #80 requires completion of confirmatory sampling report and an RFI.

SWMU #84: Former sewage treatment plant

SWMU #84 consists of two concrete tanks, two reactors, two clarifiers, secondary treatment, trickling bed filters, and six sludge drying beds. This unit is located directly north of SWMU #11 (fire training area #3). It operated from 1955 to 1980, and was used to treat base sanitary waste and some industrial wastes, such as water discharge from the majority of the base oil/water separators. Specifically, the plant received waste effluent from SWMU #16 (sanitary sewer system), which received effluent from SWMU #85 (sewage treatment plant oil/water separator). After treatment, the effluent was released to SWMU #15 (drainage ditches) via SWMU #17 (storm sewer system), and the remaining sludge was disposed of at SWMUs 1-5 (landfills). Wastes managed at SWMU #84 were generated by activities from throughout the various base operations. These may have included bromochloromethane, carbon remover, cleaning compound (potassium

hydroxide), descaling compound, fluorescent penetrant, fuels, hydraulic fluid, mercury, methylene chloride, methyl ethyl ketone, mineral spirits, PD-680, trichloroethane, trichloroethylene, turco acids, and used oils. A PA/SI was initiated in 1991 and field work commenced in summer 1993. The draft PA/SI report was submitted to EPA in September 1994. SWMU #84 requires completion of confirmatory sampling.

SWMU #85: Sewage treatment plant oil/water separator

A draft oil/water separator assessment report has been submitted to EPA. SWMU #85 requires confirmatory sampling.

SWMU #86: Refueling maintenance shop, building 516

A draft integrity evaluation report has been submitted to EPA. SWMU #86 requires confirmatory sampling.

SWMU #88: Refueling maintenance shop, building 516 oil/water separator

A draft oil/water separator assessment report has been submitted to EPA. SWMU #88 requires confirmatory sampling.

SWMU #93: Vehicle maintenance shop, building 514

A draft integrity evaluation report has been submitted to EPA. SWMU #93 requires confirmatory sampling.

SWMU #96: Vehicle maintenance oil/water separator, building 514

A draft oil/water separator assessment report has been submitted to EPA. SWMU #96 requires confirmatory sampling.

SWMU #102: Auto hobby shop, building 255

SWMU #102 requires an RFI.

SWMU #105: Auto hobby shop oil/water separator (OWS)

A draft OWS assessment report has been submitted to EPA. SWMU #105 requires confirmatory sampling.

SWMU #107: Former auto hobby shop underground waste oil storage tank

SWMU #107 requires completion of confirmatory sampling report and an RFI.

SWMU #112: BX station oil/water separator

SWMU #112 requires an RFI. Final closure of this unit under State RCRA authority will complete Respondent's actions at this unit.

SWMU #117: Power production shop oil/water separator, building 229

A draft oil/water separator assessment report has been submitted to EPA. SWMU #117 requires confirmatory sampling.

SWMU #118: Ground maintenance area, building 220

SWMU #118 requires an RFI, to be done in conjunction with the RFIs for SWMUs #136 and 145.

SWMU #121: Ground maintenance oil/water separator

SWMU #121 requires confirmatory sampling.

SWMU #133: Drum disposal area #1

SWMU #133 is an 350 foot trench in which 55-gallon drums were partially or totally buried. Little is known about the disposal activities associated with this SWMU. The drums that were buried in the trench are nearly disintegrated from weathering. The area is now covered by a parking lot, above ground storage tanks, and the base entomology lab. SWMU #133 could have possibly been an abandoned disposal area and other, covered trenches may exist nearby. No records to date have been found to confirm this possibility. SWMU #133 requires an RFI.

SWMU #135: Southwest Asia (SWA) polishing pond/fuel bladder maintenance area

The PA/SI was initiated in 1991 and field work commenced in summer 1993. The draft PA/SI report was submitted in September 1994. SWMU #135 requires completion of confirmatory sampling.

SWMU #136: Civil Engineering ("CE") paint shop sink drain

SWMU #136 was in operation from 1969 to 1988 during which time there were two documented deliveries of hazardous waste (paint and paint thinner). The plumbing in the building is a utility sink that drains to a collection tank/grease trap, then to a french drain system where effluent drains directly into the ground. Operations involving the shop included exterior and interior painting on all buildings and facilities base-wide, and application of reflective coatings to traffic and air field signs. Previous investigations at SWMU #136 have revealed metals such as barium, copper, lead, zinc, chromium, nickel, vanadium, and tin, in soil. Ethylbenzene and xylene were also detected in soils samples collected at SWMU #136. The RI/FS was initiated in

1991 and the field work for the RI commenced in summer 1993. As of August 1995, no RFI has been submitted to EPA. SWMU #136 requires an RFI, to be done in conjunction with RFIs for SWMUs #118 and 145.

SWMU #139: Small arms firing range

SWMU #139, constructed in 1956, was used for various caliber rifle and handgun (both 38 caliber and 9mm) proficiency training. The range was reduced in 1960 from a 100 yard range to a 1,000 inch range. The old soil berm backstop still exists in the wooded area behind the current range, and there is a small pond separating the old backstop from the present soil berm backstop. The range has two drains to keep rainwater from accumulating, and surface water runoff is directed to a storm water drainage ditch to the southwest of the range. Previous investigations of SWMU #139 have detected metals in soil and surface water samples. The metals that have been positively detected include barium, copper, lead, zinc, antimony, beryllium, cobalt, chromium, vanadium, mercury, nickel, and tin. The RI/FS was initiated in 1991 and field work commenced in summer 1993. Portions of the draft RI/FS report were submitted to EPA in January 1995. EPA is investigating this site with the Air Force as a possible innovative remediation or presumptive remedy demonstration project. SWMU #139 requires completion of the RFI and implementation of the Corrective Measure and/or Interim Corrective Measure.

SWMU #140: Firing-in buttress

SWMU #140 consists of the buttress and a portion of taxiway E. It is a warehouse-like building filled with sand, and has a wooden plank roof and three walls formed of concrete, with the fourth wall being open. The buttress was constructed in 1957 for F-100 aircraft to clear/fire their guns when jammed. It was used as a civilian barrier during the deactivation of munitions of an airplane. The building has not been used since the 1970's when the mission aircraft changed from A-7's to A-10's. However, the condition of the structure suggests that it has been used since that time. A PA/SI was initiated in 1991 and field work commenced in summer 1993. The draft PA/SI report was submitted in September 1994. SWMU #140 requires an RFI.

SWMU #141: Old entomology building

The Old entomology lab consists of one vacant building with an area of approximately 672 square feet, and an adjacent fenced storage area with approximately 3,000 square feet. The building is constructed of plywood with a concrete slab floor. The building has been used to store liquid and granular insecticides, herbicides, and fungicides between 1987 and 1988. There is an oil/water separator located 500 feet from the building which

receives overflow from the building in the event of a spill. During a site reconnaissance, stressed vegetation was observed outside of the northeast and southeast corners of the lab building. Furthermore, the reconnaissance revealed that the concrete floor of the building was heavily stained. Previous sampling has revealed high levels of pesticides in the soil, surface water and sediments, and elevated levels of pesticides in the groundwater. A PA/SI was initiated in 1991 and field work commenced in summer 1993. The draft PA/SI report was submitted to EPA in September 1994. SWMU #141 requires completion of the confirmatory sampling report and an RFI.

SWMU #142: Misque dump

The Misque dump is located near the southwest corner of the Facility and just south of SWMU #5 (landfill #5). The dump was a designated hard fill area and was used until 1993. Previously, various amounts of construction and organic debris with no known hazardous wastes were disposed of at this SWMU. Due to the wide variety of operations conducted at the base, and due to the lack of records, the actual type and quantity of wastes at the dump is unknown. A PA/SI was initiated in 1991 and field work commenced in summer 1993. The draft PA/SI report was submitted to EPA in September 1994. SWMU #142 requires completion of the confirmatory sampling.

SWMU #144: Golf course maintenance area

The maintenance area is located in the north-northeast section of the base, and consists of an office trailer, maintenance warehouse, two storage sheds, an equipment garage and a herbicide/pesticide storage building. Two aboveground fuel tanks (unleaded gasoline and diesel) and a steel paint storage cabinet are located just outside the northwest corner of the equipment garage on a partially bermed concrete pad. An investigation of the area revealed that the pad was heavily stained and contained numerous cracks. Pesticide management activities including mixture and application of insecticides, rodenticides, herbicides, and fungicides occurred at this SWMU. A PA/SI was initiated in 1991 and field work commenced in summer 1993. The draft PA/SI report was submitted in September 1994. SWMU #144 requires completion of the confirmatory sampling report and an RFI.

SWMU #145: Civil engineering water and waste oil/water separator

SWMU #145 requires an RFI to be done in conjunction with RFIs for SWMUs #118 and #136.

SWMU #150: POL storage area oil/water separator

The draft oil/water assessment report was submitted to EPA in October 1994. SWMU #150 requires confirmatory sampling.

SWMU #151: Waste fuels oil/water separator, Facility 89008

SWMU #151 requires an RFI

SWMU #152: Flight simulator, building 368

SWMU #152 requires confirmatory sampling.

SWMU #190: Abandoned drum disposal site #3, and

SWMU #191: Abandoned drum disposal site #4

Subsequent to the RFA investigation and report, two (2) abandoned drum disposal sites were discovered in November 1993, in the northwest portion of the base (drum site #3 and drum site #4). Confirmatory sampling was started based on information found at the drum sites. However, an RFA was never performed. SWMUs #190 and #191 require RFAs and completion of confirmatory sampling.

SWMU #213: Dental Lab septic tank

SWMU #213 requires confirmatory sampling.

SWMU #241: Precision Measurement Equipment Laboratory, Facility 519, septic tank

SWMU #241 requires confirmatory sampling.

SWMU #253: Piedmont Airlines Hanger, Facility 472, septic tank

SWMU #253 requires confirmatory sampling.

SWMU #254: Underground Solvent Storage Tank

SWMU 254 is an underground storage tank used to store trichloroethylene and other solvents. This tank is located near building 324, the solvent vat room. SWMU 254 requires confirmatory sampling and Interim Corrective Measures.

b. Pursuant to the requirements of Section VII: Work to be Performed, Respondent shall conduct an RFA and such other work under this Order as EPA deems necessary on the SWMUs discussed below. Lists of these SWMUs are located at Attachment 6, Table 3.

SWMU #168: Waste hydraulic fluid flight simulator UST-17(A)

Subsequent to the RFA report, SWMU# 168 was discovered. The UST was removed in August 1994 and the UST closure report was

submitted to SCDHEC in February 1995. SWMU #168 requires an RFA.

SWMU #169: Waste hydraulic fluid flight simulator UST-17(B)

Subsequent to the RFA report, SWMU# 169 was discovered. The UST was removed in August 1994 and the UST closure report was submitted to SCDHEC in February 1995. SWMU #169 requires an RFA.

SWMU #190: Abandoned drum disposal site #3, and

SWMU #191: Abandoned drum disposal site #4

Subsequent to the RFA investigation and report, two (2) abandoned drum disposal sites were discovered in November 1993, in the northwest portion of the base (drum site #3 and drum site #4). Confirmatory sampling was started based on information found at the drum sites. However, an RFA was never performed. SWMUs #190 and #191 require RFAs and completion of confirmatory sampling.

SWMU 195: WWII Building #09 Quartermaster Warehouse, septic tank

SWMU #195 requires an RFA.

SWMU 200: WWII Building #39, Photo Laboratory, septic tank

SWMU #200 requires an RFA.

SWMU 204: Building 202, septic tank

SWMU #204 requires an RFA.

SWMU 211: Armament facility, building 225, septic tank

SWMU #211 requires an RFA.

SWMU 231: Railroad maintenance shed, septic tank

SWMU #231 requires an RFA.

SWMU 232: RAWINSONDE facility, septic tank

SWMU #232 requires an RFA.

SWMU 234: Building 443, septic tank

SWMU #234 requires an RFA.

SWMU 239: Golf course, facility 420, septic tank

SWMU #239 requires an RFA.

SWMU 244: Building 569, septic tank

SWMU #244 requires an RFA.

SWMU 246: Building 558, septic tank

SWMU #246 requires an RFA.

SWMU 250: Area 13404, septic tank

SWMU #250 requires an RFA.

SWMU 251: Building 580/581, septic tank

SWMU #251 requires an RFA.

c. Pursuant to the requirements of Section VII: Work to be Performed, Respondent shall conduct work on the following SWMUs, as discussed below. Lists of these SWMUs are located at Attachment 6, Tables 4 and 5.

SWMU #40: Former solvent vat drainage system

SWMU #40 is a single, buried pipe that received solvent laden rinse water from a collection manifold connected to the Solvent vat room (SWMU #39) vats. The Solvent vat drainage system operated from 1976 to 1987. The unit managed aircraft soap, methylene chloride, PD-680, Turco acid, chlorinated solvents, corrosives, petroleum based solvents, and 1,1,1-Trichloroethane. Some wastes from this unit were released directly onto the soil adjacent to the solvent vat room oil/water separator. In April 1987, it was observed that water contaminated with solvents was seeping from the ground. In June 1987, the area around the solvent vat room oil/water separator (SWMU #41) was excavated and the drainage pipe was located and sealed. Volatile organic compounds that have been detected in groundwater monitoring wells installed as part of an investigation for this unit include 1,1-dichloroethane, 1,2-trans-dichloroethylene, methylene chloride, toluene, trichloroethylene, and vinyl chloride. A conceptual Interim Corrective Measures Workplan, which lacked design specifications, was submitted to EPA in January 1995, and was approved by EPA. SWMU #40 requires: 1) a complete Interim Corrective Measures workplan, including a design package, 2) implementation of the Interim Measures, and 3) a Corrective Measures Implementation workplan.

SWMU #139: Small arms firing range

SWMU #139, constructed in 1956, was used for various caliber rifle and handgun (both 38 caliber and 9mm) proficiency training. The range was reduced in 1960 from a 100 yard range to a 1,000 inch range. The old soil berm backstop still exists in the wooded area behind the current range, and there is a small pond separating the old backstop from the present soil berm backstop.

The range has two drains to keep rainwater from accumulating, and surface water runoff is directed to a storm water drainage ditch to the southwest of the range. Previous investigations of SWMU #139 have detected metals in soil and surface water samples. The metals that have been positively detected include barium, copper, lead, zinc, antimony, beryllium, cobalt, chromium, vanadium, mercury, nickel, and tin. The RI/FS was initiated in 1991 and field work commenced in summer 1993. Portions of the draft RI/FS report were submitted to EPA in January 1995. EPA is investigating this site with the Air Force as a possible innovative remediation or presumptive remedy demonstration project. SWMU #139 requires completion of the RFI and implementation of the Corrective Measure and/or Interim Corrective Measure.

SWMU #254: Underground Solvent Storage Tank

SWMU 254 is an underground storage tank used to store trichloroethylene and other solvents. This tank is located near building 324, the solvent vat room. SWMU 254 requires confirmatory sampling and Interim Corrective Measures.

14. Identified below are the SWMUs which do not require any further action to meet the objectives set forth in Section II, above. The determination of no further action was made based on results of RFAs and/or subsequent investigations, which indicated that no further action was necessary to protect human health and the environment. A list of these SWMUs is located at Attachment 6, Table 6.

SWMU #16: Sanitary Sewer System
SWMU #44: New Engine Test Cell
SWMU #45: Newer Engine Test Cell Oil/Water Separator
SWMU #59: Hanger #1, Former Oil/Water Separator
SWMU #75: Jet Washdown Rack
SWMU #76: Jet Washdown Rack Oil/Water Separator
SWMU #91: Truck Washdown Rack
SWMU #92: Truck Washdown Rack Oil/Water Separator
SWMU #99: Motor Pool Wash Rack
SWMU #100: Motor Pool Oil/Water Separator
SWMU #104: Auto Hobby Shop Oil/Water Separator No.1
SWMU #109: POL Lab Oil/Water Separator
SWMU #113: Power Production Shop
SWMU #122: 73rd TCCF Vehicle Maintenance Area
SWMU #124: 73rd TCF Oil/Water Separator
SWMU #134: Drum Disposal Area No.2
SWMU #143: EOD/Skeet Range
SWMU #146: Civil Engineering Equipment Washrack Oil/Water Separator
SWMU #148: Training Hanger Oil/Water Separator
SWMU #149: Southwest Asia Compound Oil/Water Separator

barium (15 mg/kg), cobalt (1.1 mg/kg), chromium (12 mg/kg), copper (8.9 mg/kg), lead (8.6 mg/kg), vanadium (18 mg/kg) and mercury (0.070 mg/kg). A surface water sample collected at the fuel bladder maintenance area also revealed zinc (33 ug/l). Extractable and purgeable organics have been detected in several of the abovementioned samples; however, concentration values were estimated. Sediment samples collected from the northwest drainage ditch reveal elevated levels of N-nitroso-di-n-propylamine (480 ug/kg), Dieldrin (44,800 ug/kg), Aldrin (13.3 ug/kg), 4,4-DDD (140,000 ug/kg), 4,4-DDE (126,000 ug/kg), Beta-BHC (543,000 ug/kg), Lindane (35,000 ug/kg), heptachlor expoxide (213,000 ug/kg), Chlordane (11,900,000 ug/kg), arsenic (8.9 mg/kg), lead (281 mg/kg) and mercury (7.2 mg/kg). Additional sediment samples collected at various locations on base reveal mercury (250 ug/kg), phenanthrene (5,600 ug/kg) flouranthene (112,000 ug/kg), pyrene (9,300 ug/kg), crysene (9,400 ug/kg) and other PAHs, cadmium (2.7 mg/kg), lead (556 mg/kg) and TRPH.

Soil contamination has been documented at the Facility. Soil samples at the Entomology Shop reveal 4,4-DDE (43,500 ug/kg), 4,4-DDD (39,100 ug/kg), 4,4-DDT (120,00 ug/kg), Aldrin (16,600 ug/kg), Dieldrin (96,100 ug/kg), chlordane (371,000 ug/kg), mercury (290 ug/kg) and cadmium (2.4 mg/kg) in surface soils. Soil from the small arms firing range reveal lead (6,940 mg/kg) and copper (212 mg/kg) in the surface soils.

16. Need to Protect Human Health and the Environment: The hazardous wastes or hazardous constituents identified in paragraph thirteen above may pose a threat to human health or the environment. Acute and chronic exposure to elevated levels of the following contaminants may be harmful to human health and the environment: The hazardous effects of some of these substances identified in the Respondent's SWMUs are described below from the Handbook of Toxic and Hazardous Chemicals and Carcinogens by Marshall Sitting (1985) and from Dangerous Properties of Industrial Materials, Seventh Edition, by N. Irving Sax and Richard J. Lewis, Sr. (1989):

> Benzene is an EPA listed and characteristic hazardous waste when discarded, a priority toxic pollutant and a carcinogen. Acute exposure to benzene results in central nervous system depression; headache, dizziness, nausea, convulsions, coma, and death may result. Death has occurred from large acute exposure or as a result of ventricular fibrillation. Benzene is basically a myelotoxic agent. Recent research has shown increases in the rate of chromosomal aberrations associated with benzene myelotoxicity.
>
> Lead is an EPA listed and characteristic hazardous waste and a priority toxic pollutant. Lead may be absorbed through ingestion, inhalation or skin or eye contact. Exposure to lead may affect the kidneys, blood, gingival tissue,

gastrointestinal system, and the central nervous system and may cause kidney damage, decreased physical fitness, fatigue, headaches, aching bones and muscles, abdominal pains, decreased appetite, convulsions, coma and death.

Toluene is a listed hazardous waste, F005, and a priority toxic pollutant. Acute exposure to toluene primarily causes central nervous system depression. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness, poor coordination with staggering gait, skin paresthesia, collapse and coma. Locally, toluene may cause irritation of the eyes, respiratory tract, and skin.

Chlorobenzene is a listed hazardous waste, F002, and a priority pollutant. Chronic exposure to chlorobenzene vapor may cause blood dyscrasia, hyperlipidemia, and cardiac dysfunction in humans. Like most organic solvents, chlorobenzene is a central nervous system depressant. Harmful effects and symptoms include irritation of skin, eyes, nose, drowsiness, incoordination, and liver damage.

Chloromethane Exposure to chloromethane at high levels has caused minor neurological effects such as headaches and dizziness.

Chloroform Toxic effects include eye and skin irritation, central nervous system depression, gastrointestinal irritation, liver and kidney damage, cardiac arrhythmia, ventricular tachycardia, and bradycardia. Death from chloroform overdosing can occur and is attributed to ventricular fibrillation. Chloroform is a carcinogen.

1,1-dichloroethane is a EPA listed hazardous waste and a priority toxic pollutant. Harmful effects and symptoms include central nervous system depression, skin irritation, drowsiness, unconsciousness, and liver and kidney damage.

1,2-dichloroethane is regarded as a human carcinogen. Human exposure by inhalation to 1,2-dichloroethane has shown to cause headaches, dizziness, nausea, vomiting, abdominal pain, irritation of the mucous membranes, and liver and kidney dysfunction. In severe cases, leukocytosis may be diagnosed, and internal hemorrhaging and pulmonary edema leading to death may occur.

1,2-trans-dichloroethylene Although very little information is available for this compound, exposure to high vapor concentrations of this chlorinated ethylene series have been found to cause nausea, vomiting, weakness, tremors, and cramps in humans.

Ethylbenzene Health effects and symptoms include eye and mucous membrane irritation, headache, dermatitis, necrosis, and coma.

Methylene chloride Health effects and symptoms include fatigue, weakness, light-headiness, limbs numb and tingling, nausea, irritation of skin and eyes, vertigo, worsen angina. Methylene chloride is a carcinogen.

Trichloroethylene Health effects and symptoms include headache, vertigo, visual disturbance, tremors, somnolence, nausea, vomiting,irritation of eyes, dermatitis, cardiac arrhythmias, paresthesia.

Vinyl chloride is regarded as a human carcinogen and a cause of angiosarcoma of the liver. Excess cancer of the lung and lymphatic and nervous systems has also been reported. Experimental evidence of tumor induction in a variety of organs, including liver, lung, brain, and kidneys, as well as nonmalignant alterations such as fibrosis and connective tissue deterioration indicate the multisystem oncogenic and toxicologic effects of vinyl chloride. Harmful effects and symptoms include locally, skin and eye irritation. Systemic effects and symptoms include weakness, abdominal pain, gastrointestinal bleeding, hepatomegaly, pallor or cyanosis of extremities.

17. The geographical, geological, and hydrogeological characteristics in the area of Respondent's Facility are described below:

MBAFB is located between the Atlantic Ocean and the Intercoastal Waterway, and approximately 1/2 mile south of the City of Myrtle Beach, Horry County, South Carolina. The base occupied 3,744 acres, of which 1142 acres have been transferred to other owners. MBAFB officially closed on March 31, 1993, and the Air Force will retain ownership of all properties until transfer or sale. Approximately 100 people are employed on the base. The surrounding land use is mixed residential and commercial. The areas south and east are highly developed with residential and commercial properties which support the tourist trade. Northeast and northwest of MBAFB there are scattered areas of residential development. The western and southwestern borders of the base are timberland and undeveloped properties.

The Facility lies entirely within the Atlantic Coastal Plain physiographic province and is characterized by relatively flat-lying topography. Land surface elevations range from sea level to 30 feet above mean sea level (MSL). Due to low topographic relief and near sea-level land elevations, extensive tidal marshlands have developed throughout the region.

An extensive system of man-made drainage ditches has been developed to direct surface water runoff to the tributaries of major drainage ways. The combination of both the drainage ditches and the location of base operations at elevations greater than 20 feet above MSL places these operations above the 100-year flood plain.

The unlined drainage ditches collect surface runoff from over 90% of the Facility. Ditches flowing to the north, drain into the Intercoastal Waterway while those exiting the base towards the south discharge to the Atlantic Ocean. Both of these bodies of water are located approximately one mile from the base.

Groundwater from deep water wells is a source of potable water at MBAFB. The geologic formations underlying the base contain groundwater of varying quantity and quality. The most important source of groundwater is the Black Creek aquifer system, an artisan aquifer system, which is used for municipal, industrial, and domestic water supplies.

The Black Creek aquifer system, found at 1,250 below land surface, is hydraulically separated from the underlying Middendorf system by a sequence of continuous and relatively impervious clay layers. Clay layers situated toward the top of the Black Creek Formation are believed to be a confining unit of low hydraulic conductivity between the Black Creek aquifer and the overlying aquifer in the Peedee Formation.

A water table aquifer system exists beneath MBAFB which can provide potable water. However, in the vicinity of the base, the groundwater commonly contains high concentrations of iron and objectionable levels of various other parameters. MBAFB had one supply well in the water table aquifer, but it has been closed.

18. Areas at Risk: Although releases from the Facility via the groundwater pathway have not migrated off the base, and there are on-going investigations into whether releases from the Facility via the surface water pathway have migrated off the base, these releases from the Facility may have migrated toward the Intercoastal Waterway and the Atlantic Ocean. Both of these bodies of water, located one mile from the Facility along the surface water pathway, are used extensively for recreational purposes such as boating, swimming, and fishing. Further, both bodies of water may be used for commercial fishing and shell fish harvesting.

Tidal marshlands are found along the surface water pathway in association with the Intercoastal Waterway. Tidal marshlands are characterized by abundant and diversified wildlife populations including species of fish, birds, and shellfish.

MBAFB is located within the city limits of Myrtle Beach. The areas south and east of the base are highly populated and developed with residential and commercial properties which support the tourist trade. Target populations therefore include people living or visiting in nearby housing and working in the adjacent commercial properties.

V. CONCLUSIONS OF LAW AND DETERMINATIONS

Based on the foregoing findings of fact and after consideration of the Administrative Record, the Associate Director of the Waste Management Division of EPA Region IV, has made the following conclusions of law and determinations:

1. Respondent is a "person" within the meaning of Section 1004(15) of RCRA, 42 U.S.C. § 6903(15).

2. Pursuant to Section 6001 of the Act, 42 U.S.C. § 6961, as amended by the Federal Facility Compliance Act of 1992, Pub. L. No. 102-386 (Oct. 2, 1992), Respondent is subject to, and shall comply with, all Federal, State, interstate, and local requirements, both substantive and procedural, respecting the control and abatement of solid waste or hazardous waste disposal and management in the same manner and to the same extent, as any "person" under the Act is subject to such requirements. Such Federal, State, interstate and local substantive and procedural requirements referred to in the preceding sentence include, but are not limited to, all administrative orders and all civil and administrative penalties and fines.

3. Respondent is the owner and/or operator of a Facility that is operating under interim status pursuant to Section 3005(e) of RCRA, 42 U.S.C. § 6925(e).

4. Certain wastes and constituents found at the Facility are hazardous wastes and/or hazardous constituents pursuant to Sections 1004(5) and 3001 of RCRA, 42 U.S.C. §§ 6903(5) and 6921, and 40 C.F.R. Part 261.

5. There is or has been a release of hazardous wastes or hazardous constituents into the environment from Respondent's Facility. Respondent has had independent authority under CERCLA and has initiated investigations at IRP sites and SWMUs. 115 SWMUs have been determined to require no further action, a response action has been completed at one IRP site (SWMU #143) and response actions have been initiated at one other IRP site (SWMU #40). No other decision documents have been issued to date, and no other IRP sites have been remediated.

6. The actions required by this Order are necessary to protect human health and/or the environment.

VI. PROJECT COORDINATOR

1. Within 10 calendar days of the effective date of this Order, Respondent shall designate a Project Coordinator. Respondent shall notify EPA in writing of the Project Coordinator it has selected. The EPA Project Coordinator is identified in Section XIV: Notification and Document Certification, of this Order. Each Project Coordinator shall be responsible for overseeing the implementation of this Order and for designating a person to act in his/her absence. The EPA Project Coordinator will be EPA's designated representative for the Facility. All communications between Respondent and EPA, and all documents, reports, approvals, and other correspondence concerning the activities performed pursuant to this Order shall be directed through the Project Coordinators.

2. Respondent shall provide at least ten (10) calendar days written notice prior to changing Project Coordinators, Professional Engineers/Geologist or Contractor/Subcontractor.

3. The absence of the EPA Project Coordinator from the Facility shall not be cause for the stoppage of work.

VII. WORK TO BE PERFORMED

Pursuant to Section 3008(h) of RCRA, Respondent is hereby ordered to perform the acts set forth in this Order and specified in this Section VII: Work to be Performed, in the manner and by the dates specified in this Order including all attachments and appendices. All work required pursuant to this Order shall be performed in a manner consistent with, at a minimum the attached Scopes of Work (Attachment 2: Scope of Work for Interim Corrective Measures at Myrtle Beach Air Force Base ("Attachment 2"), Attachment 3: Scope of Work for RCRA Facility Investigation at Myrtle Beach Air Force Base ("Attachment 3"), Attachment 4: Scope of Work for a Corrective Measures Study at Myrtle Beach Air Force Base ("Attachment 4")); all EPA-approved workplans including but not limited to Interim Measures Workplans, RCRA Facility Investigation Workplans, Corrective Measures Study Workplans, Corrective Measures Implementation Workplans, and all other Workplans; RCRA and other applicable Federal laws and their implementing regulations; EPA RCRA Facility Assessment Guidance, Technical Guidance Document: Determining the Integrity of Concrete Sumps (EPA/530-R-93-005), and any other applicable EPA guidance documents, guidelines, and procedures. Applicable EPA guidance documents, guidelines and procedures shall include, but are not limited to, all documents listed in Attachment 1: Reference Documents, Guidelines and Procedures for Work to be Performed at Myrtle Beach Air Force Base ("Attachment 1"), all documents listed in Attachment 2, Attachment 3, and Attachment 4, and all subsequent amendments to such guidelines and procedures. All documents, guidance documents, policies and guidelines

identified in this paragraph are incorporated by reference as if fully set forth herein.

A. NOTIFICATION AND ASSESSMENT REQUIREMENT

1. Respondent shall notify EPA in writing of any newly discovered SWMU, or newly discovered release of hazardous waste or hazardous constituents, discovered during the course of any investigation, environmental audit, or other means, within fifteen (15) calendar days of its discovery.

2. Within ninety (90) calendar days following the notification required in paragraph 1, Respondent shall prepare and submit to EPA for review and approval, a RFA Report for each SWMU identified under paragraph 1.

3. Within ninety (90) calendar days of the effective date of this Order, Respondent shall submit to EPA for review and approval RFA (or revised RFA) Reports for the SWMUs listed in Attachment 6, Table 3.

4. All RFA Reports shall be prepared according to the requirements and in a manner consistent with EPA's RCRA Facility Assessment Guidance (Office of Solid Waste, U.S. Environmental Protection Agency, Oct. 1986) and any other requirements of this Order. Any SWMU or release identified pursuant to this subsection is subject to all provisions of Section VII: Work to be Performed.

5. EPA will review the RFA Report(s) and will notify Respondent in writing of EPA's approval/disapproval, or modification in accordance with Section IX: Agency Approvals/Submittals/Proposed Contractor/Additional Work.

6. Based on the results of the RFA, EPA shall determine the need for further investigation at SWMUs covered in the RFA. If EPA determines that such investigations are needed, Respondent shall be required to prepare a plan for such investigations as outlined in Subsection B or C of this Section VII.

B. CONFIRMATORY SAMPLING (CS)

1. Respondent shall prepare and submit to EPA, within one hundred and five (105) calendar days of notification by EPA that CS is necessary for either a newly identified SWMU identified under paragraph 1 of Subsection A of this Section VII or any SWMU identified in Table 2 of Attachment 6, a CS Workplan to determine whether a release has occurred from a SWMU. If CS was proposed in the RFA, then Respondent shall have ninety (90) calendar days from the effective date of this Order to prepare and submit to EPA a CS Workplan. The CS Workplan shall include schedules of implementation and completion of specific actions necessary to

determine whether or not a release has occurred. It shall address all affected media.

2. All CS Workplans must be approved by EPA, in writing, prior to implementation. EPA will review the CS Workplans and will notify Respondent in writing of EPA's approval/disapproval, or modification in accordance with Section IX: Agency Approvals/Submittals/Proposed Contractor/Additional Work. EPA shall specify the start date of the CS Workplan schedule in the letter approving or modifying the CS Workplan.

3. Respondent shall implement the confirmatory sampling in accordance with the approved CS Workplan.

4. For the SWMUs listed in Table 2, Attachment 6, Respondent shall prepare and submit a Confirmatory Sampling (CS) Report to EPA in accordance with the schedule contained in the schedule set forth in Attachment 7. For SWMUs identified by EPA as requiring confirmatory sampling pursuant to paragraph 1 of this Subsection B: Confirmatory Sampling, Respondent shall prepare and submit to EPA a CS Report in accordance with the schedule in the approved CS Workplan for that SWMU. The CS Report shall include all data, including raw data, and a summary and analysis of the data that supports any findings as to whether or not a release has occurred.

5. EPA will review the CS Report(s) and will notify Respondent in writing of EPA's approval/disapproval, or modification in accordance with Section IX: Agency Approvals/Submittals/Proposed Contractor/Additional Work.

6. Based on the results of the CS Report, EPA shall determine the need for further investigations or further action at the SWMU(s) covered in the CS Report. If EPA determines that such investigations are needed, Respondent shall be required to prepare a plan for such investigations as outlined in paragraph 1 of subsection D. EPA will notify Respondent of its decision regarding any further action in writing.

C. RCRA FACILITY INVESTIGATION (RFI)

1. Within one hundred and five (105) calendar days from the date of receipt of notice from EPA of a need for an RFI at a particular SWMU, Respondent shall submit to EPA a workplan for a RCRA Facility Investigation ("RFI Workplan"). The effective date of this Order shall constitute Respondent's "receipt of notice" discussed in the preceding sentence for the SWMUs listed in Table 1 of Attachment 6. The RFI Workplan is subject to the approval of EPA and shall be developed in a manner consistent with the RFI Scope of Work contained in Attachment 3, except that the Health and Safety Plan shall be submitted concurrent with the RFI Workplan, as a separate document.

2. The RFI Work Plan(s) shall include schedules for implementation of the RFI and detail the methodology necessary to: (1) identify and characterize all sources of contamination; (2) determine the nature and extent of contamination; (3) identify the potential pathways of contaminant releases; (4) identify actual or potential human and/or ecological receptors; and (5) support the development of alternatives from which a corrective measure(s) will be selected by EPA. Respondent shall provide sufficient justification and associated documentation if a media/pathway associated with a SWMU (groundwater, surface water, soil, subsurface gas, or air) is not included in the RFI Work Plan(s). Such deletions of a media or pathway from the RFI(s) are subject to the approval of EPA. Respondent shall provide sufficient written justification for any omissions or deviations from the minimum requirements of Attachment 3. Such omissions or deviations are subject to the approval of EPA. EPA will review the RFI Work Plan(s) and will notify Respondent in writing of EPA's approval/disapproval, or modification in accordance with Section IX: Agency Approvals/Submittals/Proposed Contractor/Additional Work.

3. Respondent shall prepare and submit to EPA Draft and Final RCRA Facility Investigation Report(s) for the sites listed in Table 1, Attachment 6, and for any SWMUs for which RFI investigations are required by EPA pursuant to paragraph 1 of this Subsection. In the case of investigations initiated prior to the effective date of this Order, for which RFI Work Plans already exist, the Draft RFI Report(s) shall be submitted to EPA for review in accordance with the schedule contained in the Current Conditions Report, incorporated into this Order as Attachment 7. For RFIs conducted pursuant to paragraph 1 of this Subsection, the draft RFI Report(s) shall be submitted to EPA for review in accordance with the schedule in the approved RFI Work Plan(s). The Final RFI Report(s) shall be submitted to EPA within thirty (30) calendar days of receipt of EPA's comments on the Draft RFI Report, or later if so specified by EPA in its comments on the Draft RFI Report. The RFI Report(s) shall describe the investigation methods used, the type and extent of contamination at the Facility, including sources and migration pathways, identify all hazardous constituents present in all media, and describe actual or potential receptors. The RFI Report(s) shall describe the extent of contamination (qualitative/quantitative) in relation to background levels representative of the area. The RFI Report shall also support the development of corrective measures alternatives.

4. The Respondent shall prepare and submit to EPA, along with the Draft and Final RFI Report(s), action levels for each of the hazardous constituents reported in the RFI Report(s). Action levels shall be calculated as specified in Attachment 8, Action Levels for Myrtle Beach Air Force Base.

5. EPA will review the Final RFI Report(s), including the action levels, and notify the Respondent of the need for further investigative action and/or the need for a Corrective Measures Study to meet the requirements of Subsection E. EPA will notify Respondent of EPA's decision regarding any further action. Any further investigative action required by EPA shall be prepared and submitted in accordance with this subsection and pursuant to a schedule specified by EPA. EPA will review the Final RFI Report(s) and will notify Respondent in writing of EPA's approval/disapproval, or modification in accordance with Section IX: Agency Approvals/Submittals/Proposed Contractor/Additional Work.

D. INTERIM MEASURES (IM)

1. Respondent shall evaluate available data and assess the need for interim measures, in addition to those specifically required by this Order. Interim measures shall be used whenever possible to achieve the goal of stabilization to control or abate immediate threats to human health and/or the environment and to minimize or prevent the further migration of contaminants while long-term corrective action remedies are being evaluated. Respondent shall submit a Current Conditions Report in accordance with Subsection G of this Section VII: Work to Be Performed. The Current Conditions Report shall contain an assessment of previously implemented interim measures. The assessment must identify and evaluate other Interim Measures alternatives that could be implemented at the Facility and identify any new data needed for making decisions on stabilization. If EPA determines that new data or information is needed, EPA shall notify Respondent and Respondent shall collect such new data or information in the manner and according to a schedule provided by EPA. EPA will review Respondent's data and assessment and other information available to EPA, and select, if any, an appropriate interim measure(s) for implementation by Respondent. If deemed appropriate by EPA, such selection may be deferred until additional data is collected.

2. Within thirty (30) calendar days following receipt of a notice from EPA of the requirement for interim measures, due to EPA's determination that the past or present handling, storage, treatment, transportation or disposal of any solid or hazardous waste may present an imminent and substantial endangerment to health or the environment, Respondent shall submit to EPA a workplan for implementation of interim measures ("IM Workplan"). The IM Workplan shall provide for the performance of all interim measures necessary to achieve stabilization at the Facility in accordance with the Interim Measures Scope of Work appended as Attachment 2. EPA will review the IM Workplan and will notify Respondent in writing of EPA's approval/disapproval, or modification in accordance with Section IX: Agency Approvals/Submittals/Proposed Contractor/Additional Work.

3. Within one hundred and fifty two (152) calendar days following receipt of a notice from EPA of the requirement for interim measures, the determination of which is based on the existence of one or more of the factors cited below, Respondent shall submit to EPA a workplan for implementation of interim measures ("IM Workplan"). The factors which EPA will use to make such determination that an IM workplan is necessary to expeditiously initiate cleanup action are (1) actual or potential exposure of nearby populations or environmental receptors to hazardous wastes (including hazardous constituents); (2) actual or potential contamination of drinking water supplies or sensitive ecosystems; (3) further degradation of the medium which may occur if remedial action is not initiated expeditiously; (4) presence of high levels of hazardous wastes (including hazardous constituents) in soils largely at or near the surface, that may migrate; (5) weather conditions that may cause hazardous wastes (including hazardous constituents) to migrate or be released; (6) risks of fire or explosion, or potential for exposure to hazardous wastes (including hazardous constituents) as a result of an accident or failure of a container or handling system. The IM Workplan shall provide for the performance of all interim measures necessary to achieve stabilization at the Facility in accordance with the Interim Measures Scope of Work appended as Attachment 2. EPA will review the IM Workplan and will notify Respondent in writing of EPA's approval/disapproval, or modification in accordance with Section IX: Agency Approvals/Submittals/Proposed Contractor/Additional Work.

4. In the event Respondent identifies an immediate or potential threat to human health or the environment, Respondent shall notify the EPA Project Coordinator orally within 48 hours of discovery and notify EPA in writing within five (5) calendar days of such discovery summarizing the immediacy and magnitude of the potential threat(s) to human health and/or the environment. For an imminent and substantial threat, within thirty (30) calendar days of notifying EPA, Respondent shall submit to EPA an IM Workplan specifying proposed stabilization activities and a schedule of activities for EPA's approval. For an immediate or potential threat that is not imminent and substantial, within one hundred and fifty two (152) calendar days of notifying EPA, Respondent shall submit to EPA an IM Workplan specifying proposed stabilization activities and a schedule of activities for EPA's approval. If EPA determines that immediate action is required, the EPA Project Coordinator may orally authorize Respondent to act prior to EPA's receipt of the IM Workplan. Respondent shall implement interim measures within ten (10) calendar days of receiving EPA's written approval of the IM Workplan or oral authorization pursuant to this paragraph.

5. If EPA identifies an immediate or potential threat to human health and/or the environment, EPA will notify Respondent in writing. For an imminent and substantial threat, within

thirty (30) calendar days of receiving EPA's written notification, Respondent shall submit to EPA for approval an IM Workplan that identifies interim measures which will mitigate the threat. For an immediate or potential threat that is not imminent and substantial, within one hundred and fifty two (152) calendar days of receiving EPA's written notification, Respondent shall submit to EPA for approval an IM Workplan that identifies interim measures which will mitigate the threat. If EPA determines that immediate action is required, the EPA Project Coordinator may orally direct Respondent to act prior to Respondent's receipt of EPA's written notification. Respondent shall implement interim measures within ten (10) calendar days of receiving EPA's written approval of the IM Workplan or oral directive pursuant to this paragraph.

6. All IM Workplans shall ensure that the interim measures are designed to mitigate immediate or potential threat(s) to human health and/or the environment, and must be consistent with the objectives of, and contribute to the performance of, any long-term remedy which may be required at the Facility.

7. In accordance with Attachment 2 herein, the IM Workplan shall include the following sections:

- Interim Measures Objectives
- Public Involvement Plan, as required
- Data Collection Quality Assurance
- Data Management
- Design Plans and Specifications
- Operation and Maintenance
- Project Schedule
- Interim Measure Construction Quality Assurance
- Reporting Requirements

8. Concurrent with the submission of an IM Workplan, Respondent shall submit to EPA a Health and Safety Plan in accordance with Attachment 2 of this Order.

9. Respondent shall implement all interim measures required by this Order as approved by EPA and in accordance with the schedule approved by EPA.

E. CORRECTIVE MEASURES STUDY (CMS)

1. Within ninety (90) calendar days following receipt of notice from EPA that a CMS is needed for a SWMU(s) or AOC(s), Respondent shall submit a CMS Workplan to EPA. The CMS Workplan shall be developed in a manner consistent with the CMS Scope of Work contained in Attachment 4 to this Order. EPA will review the CMS Workplan and notify Respondent in writing of EPA's approval/disapproval, or modification in accordance with Section

IX: Agency Approvals/Submittals/Proposed Contractor/Additional Work.

2. The CMS Workplan shall provide, at a minimum, the following information:

- schedules of implementation and completion of specific actions necessary to complete a CMS;
- A description of the general approach to the CMS and potential receptors;
- A statement of the overall objectives of the study;
- The specific plans for evaluating remedies to ensure compliance with the Media Cleanup Standards (MCS) at the point of compliance;
- The proposed format for the presentation of information;
- A justification for each corrective measure that Respondent proposes to study to achieve the MCS;

3. Respondent shall prepare treatability studies in accordance with Attachment 4 for all potential corrective measures that involve treatment, except where Respondent can demonstrate to EPA's satisfaction that they are not needed. The CMS Workplan shall include, at a minimum, a summary of the proposed treatability study and conceptual design, and a schedule for submitting the treatability study workplan or Respondent's justification for not proposing a treatability study.

4. Concurrent with the submission of an CMS Workplan, Respondent shall submit to EPA a Health and Safety Plan. If Health and Safety Plans have been prepared for IM, RFI, and CMS activities pursuant to this Section of this Order, Respondent may submit a revised Health and Safety Plan that addresses the site-specific conditions following the IM and RFI activities.

5. Respondent shall submit a CMS Report to EPA for approval in accordance with the EPA approved CMS Workplan schedule. EPA will review the CMS Report and notify Respondent in writing of EPA's approval/disapproval, or modification in accordance with Section IX: Agency Approvals/Submittals/Proposed Contractor/Additional Work.

6. The CMS Report shall contain, at a minimum, the following information for each corrective measure studied:

- An evaluation of any treatability studies performed;

9. If EPA determines that new or additional information submitted pursuant to the public notice and comment of Section VIII requires additional Work to be Performed, EPA will notify Respondent in writing of any additional Work to be Performed. Respondent shall conduct such additional Work to be Performed in the manner and according to the schedule approved by EPA.

F. CORRECTIVE MEASURES IMPLEMENTATION (CMI)

1. Within one hundred and fifty two (152) calendar days of Respondent's receipt of notification of EPA's selection of the corrective measure(s), Respondent shall submit to EPA a Corrective Measures Implementation Workplan ("CMI Workplan"). The CMI Workplan is subject to approval by EPA.

2. The CMI Workplan shall be designed to facilitate the design, construction, operation, maintenance, and monitoring of corrective measures at the Facility. The CMI Workplan shall also include, but not be limited to, the following sections:

- Program Management
- Public Involvement Plan, as required
- Design Plans and Specifications
- Operation and Maintenance
- Cost Estimate
- Project Schedule
- Construction Quality Assurance
- Data Collection Quality Assurance
- Data Management.

3. Concurrent with the submission of a CMI Workplan, Respondent shall submit to EPA a CMI Health and Safety Plan. If a Health and Safety Plan was required for the CMS, Respondent may submit a single Health and Safety Plan that addresses the combined activities.

4. EPA will review the CMI Workplan and notify Respondent in writing of EPA's approval/disapproval, or modification in accordance with Section IX: Agency Approvals/Submittals/Proposed Contractor/Additional Work.

5. Respondent shall submit a CMI report to EPA in accordance with the EPA approved CMI workplan schedule. EPA will review the CMI report and notify Respondent of EPA's approval/ disapproval or modification in accordance with Section IX: Agency Approvals/Submittals/Proposed Contractor/Additional Work.

6. Respondent shall fully implement the CMI Workplan, as approved by EPA and according to the approved CMI Workplan and schedule. EPA reserves the right to determine, in its sole and unreviewable discretion, whether Respondent has fully implemented the CMI Workplan. If EPA determines that Respondent has not

- An evaluation of the overall protectiveness of human health and of the environment;
- Ability to attain the MCSs at the points of compliance;
- Ability to control the sources of releases;
- An estimate and analysis of quantity, volume, and/or toxicity of the waste generated, including, but not limited to, contaminated soil, sludge, and groundwater;
- Methods to minimize the volume, toxicity, and/or mobility of waste to be generated;
- An assessment of how institutional and legal requirements including federal, state, or local environmental or public health standards, regulations, and/or ordinances will affect the design, operation, and timing of each corrective action alternative;
- An assessment of short-term and long-term reliability and effectiveness, including but not limited to, the methodology used to estimate short-term and long-term reduction of toxicity, mobility, or volume of waste and the resulting estimate;
- An evaluation of ease of implementation;
- An estimate of the cost, including capital and annual operation and maintenance costs;
- A recommendation as to which corrective measures, in Respondent's opinion, are the most appropriate, and the rationale for such recommendations.

7. In accordance with Section VIII: Public Participation, EPA will provide the public with an opportunity to submit written and/or oral comments and an opportunity for a public meeting regarding EPA's proposed cleanup standards and remedy for the Facility.

8. As provided in Section VIII: Public Participation and Comment in Corrective Measure(s) Selection, EPA will notify Respondent which corrective measure is selected, if any. If the corrective measure recommended in the Corrective Measures Study Final Report is not the corrective measure selected by EPA after consideration of public comments, EPA will inform Respondent in writing of the reasons for such decision and the Respondent shall modify the Corrective Measures Study Final Report as directed to do so by EPA.

fully implemented the CMI Workplan, EPA may require any such additional Work to be Performed as EPA deems necessary.

G. CURRENT CONDITIONS REPORT

1. Respondent shall submit a Current Conditions Report within fourteen (14) calendar days of the effective date of this Order. The current conditions report shall be reviewed and approved by EPA.

2. The Current Conditions Report as approved by EPA shall be attached to this Order as Attachment 7.

3. The Current Conditions Report shall contain a description of each SWMU, the status of each SWMU, a comprehensive schedule for the implementation of the Work to be Performed under this Order, and any other information required of a Current Conditions Report by any other provision of this Order. The Current Conditions Report shall also contain an assessment of previously implemented interim measures, if any.

4. Within thirty (30) calendar days following a request by EPA for an amended Current Conditions Report, Respondent shall submit an amended Current Conditions Report(s) for EPA's review and approval.

5. EPA will review the Current Conditions Report and notify Respondent in writing of EPA's approval/disapproval, or modification in accordance with Section IX: Agency Approvals/Submittals/Proposed Contractor/Additional Work.

H. WORKPLAN AND CURRENT CONDITIONS REPORT SCHEDULES

1. The Current Conditions Report required by Subsection G of this section shall include a comprehensive schedule for the implementation of the Work to be Performed under this Order. This comprehensive schedule is included for the purposes of planning activities carried out pursuant to this Subsection VII: Work to be Performed.

2. To the extent that any schedule in Attachment 7: Current Conditions Report, conflicts with a schedule in a workplan approved pursuant to this Order, or any other schedule set by EPA pursuant to this Order, the schedule in the workplan approved pursuant to this Order and/or the schedule set by EPA pursuant to this Order shall be deemed the schedule under which all activities and obligations under this Order shall be carried out, including but not limited to this Section VII: Work to be Performed.

VIII. PUBLIC PARTICIPATION AND COMMENT IN CORRECTIVE MEASURE(S) SELECTION

1. EPA will provide the public with an opportunity to review and comment on the final of the Corrective Measures Study Report, a description of EPA's proposed corrective measures, and EPA's justification for proposing the selected corrective measures (the "Statement of Basis").

2. Following the public comment period, EPA will notify Respondent which corrective measure is selected, if any. If the corrective measure recommended in the Corrective Measures Study Final Report is not the corrective measure selected by EPA after consideration of public comments, EPA will inform Respondent in writing of the reasons for such decision and the Respondent shall modify the Corrective Measures Study Final Report as directed to do so by EPA.

3. The Administrative Record supporting the selection of the corrective measure will be available for public review at U.S. EPA Region IV, 345 Courtland Street, N.E., Atlanta, Georgia 30365.

IX. AGENCY APPROVALS/SUBMITTALS/PROPOSED CONTRACTOR/ ADDITIONAL WORK

A. EPA APPROVALS

1. EPA will provide Respondent with its written approval, approval with conditions, disapproval, or disapproval with comments and/or modifications for any workplan, report (except progress reports), specification, or schedule submitted pursuant to or required by this Order.

2. Respondent shall revise any workplan, report, specification, or schedule in accordance with EPA's written comments within fourteen (14) calendar days of Respondent's receipt of EPA's written comments unless EPA has specified an alternative due date, in which case Respondent shall submit to EPA any revised submittals in accordance with the alternative due date specified by EPA. Revised submittals are subject to EPA approval, approval with conditions, disapproval, or disapproval with comments and/or modifications.

3. Upon receipt of EPA's written approval, Respondent shall commence work and implement any approved workplan in accordance with the schedule and provisions contained therein.

4. Any EPA approved report, workplan, specification, or schedule shall be deemed incorporated into this Order. Prior to this written approval, no workplan, report, specification, or schedule shall be construed as approved and final. Oral advice, suggestions, or comments given by EPA representatives will not constitute an official approval, nor shall any oral approval or

oral assurance of approval be considered binding, unless otherwise noted in this Order.

B. SUBMITTALS

1. Beginning with the first full month following the effective date of this Order, and throughout the period that this Order is effective, Respondent shall provide EPA semiannually an updated Base Closure Plan (the "Plan"). The Plan is due by the fifteenth (15) calendar day of the month following the end of the previous six months.

2. Four (4) copies of all draft documents and two (2) copies of all final documents submitted pursuant to this Order shall be hand delivered, sent by certified mail, return receipt requested, or by overnight certified express mail to the EPA Project Coordinator or to other addressees she/he designates, unless otherwise specified by EPA. Three copies of all documents submitted pursuant to this Order shall be hand delivered, sent by certified mail, return receipt requested, or by overnight express mail to SCDHEC, unless otherwise specified by SCDHEC. All submittals required by this Order shall be printed on recycled paper, where possible.

C. PROPOSED CONTRACTOR/CONSULTANT

1. All work performed pursuant to this Order shall be under the direction and supervision of a professional engineer, hydrologist, geologist, or environmental scientist, with expertise in hazardous waste cleanup. Respondent's contractor or consultant shall have the technical expertise sufficient to adequately perform all aspects of the work for which it is responsible. Within 15 calendar days of any change in Respondent's contractor or consultant, Respondent shall notify the EPA Project Coordinator in writing of the name, title, and qualifications of the new engineer, hydrologist, geologist, or environmental scientist and of any new contractors or consultants and their personnel to be used in carrying out the terms of this Order. Respondent shall, in procuring or hiring any contractor, consultant or person to implement the terms of this Order, follow Federal Acquisition Regulations regarding contractor qualifications necessary to carry out the terms of this Order. Respondent shall not use or employ any person who has been debarred or suspended under 40 C.F.R. Part 32 or 48 C.F.R. Part 9.4.

D. ADDITIONAL WORK

1. EPA may determine or Respondent may propose that certain tasks, including investigatory work, engineering evaluation, or procedure/methodology modifications, are necessary in addition to or in lieu of the tasks included in any EPA-approved workplan,

when such additional work is necessary to meet the purposes set forth in Section II: Statement of Purpose. EPA may determine that Respondent shall perform the additional work and EPA will specify in writing the basis for its determination that the additional work is necessary. Within 30 calendar days after the receipt of such determination, Respondent shall have the opportunity to meet or confer with EPA to discuss the additional work. If required by EPA, Respondent shall submit for EPA approval a workplan for the additional work. Any such workplan shall be submitted according to a schedule established by EPA based on site specific conditions, and at least thirty (30) calendar days after receipt of EPA's determination that additional work is necessary. Upon approval of a workplan, Respondent shall implement it in accordance with the schedule and provisions contained therein.

X. QUALITY ASSURANCE

1. Respondent shall follow the EPA Region 4 Environmental Compliance Branch Standard Operating Procedures and Quality Assurance Manual, and other EPA guidance for sampling and analysis. Workplans shall contain quality assurance/quality control and chain of custody procedures for all sampling, monitoring, and analytical activities. Any deviations from the approved workplans must be approved by EPA prior to implementation; must be documented, including reasons for the deviations; and must be reported in the applicable report.

2. The name(s), addresses, and telephone numbers of the analytical laboratories Respondent proposes to use must be specified in the applicable workplan(s).

3. All workplans required under this Order shall include data quality objectives for each data collection activity to ensure that data of known and appropriate quality are obtained and that data are sufficient to support their intended use(s).

4. Respondent shall monitor to ensure that high quality data is obtained by its consultant or contract laboratories. Respondent shall ensure that laboratories used by Respondent for analysis perform such analysis according to the latest approved edition of "Test Methods for Evaluating Solid Waste, (SW-846)," or other methods deemed satisfactory to EPA. If methods other than EPA methods are to be used, Respondent shall specify all such protocols in the applicable workplan. EPA may reject any data that does not meet the requirements of the approved workplan or EPA analytical methods and may require resampling and additional analysis.

5. Respondent shall ensure that laboratories it uses for analyses participate in a quality assurance/quality control program equivalent to that which is followed by EPA. EPA may

conduct a performance and quality assurance/quality control audit of the laboratories chosen by Respondent before, during, or after sample analyses. Upon request by EPA, Respondent shall have its laboratory perform analyses of samples provided by EPA to demonstrate laboratory performance. If the audit reveals deficiencies in a laboratory's performance or quality assurance/quality control, resampling and additional analysis may be required.

XI. SAMPLING AND DATA/DOCUMENT AVAILABILITY

1. Respondent shall submit to EPA the results of all sampling and/or tests or other data generated by divisions, agents, consultants, or contractors pursuant to this Order.

2. Notwithstanding any other provisions of this Order, EPA retains all of its information gathering and inspection authorities and rights, including the right to bring enforcement actions related thereto, under RCRA, CERCLA, and any other applicable statutes or regulations.

3. Respondent shall notify EPA in writing at least fourteen (14) calendar days before engaging in any field activities, such as well drilling, installation of equipment, or sampling. If Respondent believes it must commence emergency field activities without delay, Respondent may seek emergency telephone authorization from the EPA Project Coordinator or, if the EPA Project Coordinator is unavailable, his/her Section Chief or Team Leader, to commence such activities immediately. At the request of EPA, Respondent shall provide or allow EPA or its authorized representative to take split or duplicate samples of all samples collected by Respondent pursuant to this Order. Similarly, at the request of Respondent, EPA shall allow Respondent or its authorized representative(s) to take split or duplicate samples of all samples collected by EPA under this Order.

4. Respondent may assert a confidentiality claim covering all or part of any information submitted to EPA pursuant to this Order. Any assertion of confidentiality must be accompanied by information that satisfies the items listed in 40 C.F.R. § 2.204(e)(4) or such claim shall be deemed waived. Information determined by EPA to be confidential shall be disclosed only to the extent permitted by 40 C.F.R. Part 2. If no such confidentiality claim accompanies the information when it is submitted to EPA, the information may be made available to the public by EPA without further notice to Respondent. Respondent shall not assert any confidentiality claim with regard to any physical or analytical data.

XII. ACCESS

1. EPA, its contractors, employees, and/or any EPA representatives are authorized to enter and freely move about the Facility pursuant to this Order for the purposes of, inter alia: interviewing Facility personnel and contractors; inspecting records, operating logs, and contracts related to the Facility; reviewing the progress of Respondent in carrying out the terms of this Order; conducting such tests, sampling, or monitoring as EPA deems necessary; using a camera, sound recording, or other documentary type equipment; and verifying the reports and data submitted to EPA by Respondent. The Respondent shall provide EPA and its representatives access at all reasonable times to the Facility and subject to paragraph 2 below, to any other property to which access is required for implementation of this Order. Respondent shall permit such persons to inspect and copy all records, files, photographs, documents, including all sampling and monitoring data, that pertain to work undertaken pursuant to this Order and that are within the possession or under the control of Respondent or its contractors or consultants.

2. To the extent that work being performed pursuant to this Order must be done beyond the Facility property boundary, Respondent shall use its best efforts to obtain access agreements necessary to complete work required by this Order from the present owner(s) of such property within 30 calendar days of approval of any workplan for which access is required. Best efforts as used in this paragraph shall include, at a minimum, a certified letter from Respondent to the present owner(s) of such property requesting access agreement(s) to permit Respondent, EPA, and its authorized representatives to access such property, and the payment of reasonable sums of money in consideration of granting access. Any such access agreement shall provide for access by EPA and its representatives. Respondent shall insure that EPA's Project Coordinator has a copy of any access agreement(s). In the event that agreements for access are not obtained within 30 calendar days of approval of any workplan for which access is required, or of the date that the need for access became known to Respondent, Respondent shall notify EPA in writing within 10 calendar days thereafter of both the efforts undertaken to obtain access and the failure to obtain such agreements. EPA may, at its discretion, assist Respondent in obtaining access. In the event EPA obtains access, Respondent shall undertake EPA-approved work on such property.

3. Nothing in this section limits or otherwise affects EPA's right of access and entry pursuant to applicable law, including RCRA and CERCLA.

4. Nothing in this section shall be construed to limit or otherwise affect Respondent's liability and obligation to perform corrective measures including corrective measures beyond the Facility boundary, notwithstanding the lack of access. In case of transfer or lease of any portion of the Facility, Respondent

shall retain a right of access to the extent required to fully implement the terms of this Order.

XIII. RECORD PRESERVATION

1. Respondent shall retain, during the pendency of this Order and for a minimum of six (6) years after its termination, all data, records, and documents now in its possession or control or which come into its possession which relate in any way to this Order or to hazardous waste management and/or disposal at the Facility. Subsequent to the termination of the aforementioned six (6) year period, Respondent shall provide written notification to EPA sixty (60) calendar days prior to the destruction of any data, records or documents that relate in any way to this Order, its implementation, or to hazardous waste management practices and/or disposal at its Facility. At EPA's request, Respondent shall then make such records available to EPA for inspection and/or EPA's retention or shall provide copies of any such records to EPA prior to discarding. Such written notification shall reference the effective date, caption, and docket number of this Order and shall be addressed to:

Chief, RCRA Branch
Waste Management Division
US EPA, Region IV
345 Courtland Street, N.E.
Atlanta, GA 30365

2. Within 10 calendar days of the effective date of this Order, or of retaining or employing any agent, consultant, or contractor for the purpose of carrying out the terms of this Order, Respondent will enter into an agreement with any such agents, consultants, or contractors whereby such agents, consultants, and/or contractors will be required to provide Respondent a copy of all documents produced pursuant to this Order.

3. All documents pertaining to this Order shall be stored by the Respondent in a centralized location at the Facility to afford ease of access by EPA or its representatives.

4. All data, information, and records concerning, created for, or maintained by Respondent, in connection with this Order, shall be made available to EPA upon request. All employees of MBAFB and all persons, including contractors and subcontractors who engage in activity under this Order, shall be made available to and shall cooperate with EPA if information is sought.

XIV. NOTIFICATION AND DOCUMENT CERTIFICATION

Unless otherwise specified, all reports, correspondence, approvals, disapprovals, notices, or other submittals relating to

or required under this Order shall be in writing and shall be sent to:

1. Unless otherwise specified by EPA, four (4) copies of all documents to be submitted to EPA shall be sent to EPA's Project Coordinator:

Cathy Amoroso
Remedial Project Manager
USEPA, Region IV
345 Courtland St., N.E.
Atlanta, GA 30365

2. Unless otherwise specified by SCDHEC, three (3) copies of all documents to be submitted to EPA shall also be sent to:

Ann Ragan
Federal Facilities Liaison
Bureau of Solid and Hazardous Waste Management
South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, South Carolina 29201

3. Any report or other document submitted by Respondent pursuant to this Order which makes any representation concerning Respondent's compliance or noncompliance with any requirement of this Order shall be certified by a responsible officer of the United States Air Force and/or the Air Force Base Conversion Agency.

4. The certification required by paragraph three (3) above, shall be in the following form:

"I certify that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to evaluate the information submitted. I certify that the information contained in or accompanying this submittal is true, accurate, and complete. As to those identified portion(s) of this submittal for which I cannot personally verify the accuracy, I certify that this submittal and all attachments were prepared in accordance with procedures designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those directly responsible for gathering the information, or the immediate supervisor of such person(s), the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting

false information, including the possibility of fine and imprisonment for knowing violations."

Signature: _____
Name: _____
Title: _____
Date: _____

XV. DISPUTE RESOLUTION

1. If Respondent disagrees, in whole or in part, with any written decision (Initial Written Decision) by EPA pursuant to this Order, Respondent's Project Coordinator shall notify the EPA Project Coordinator and the BRAC Cleanup Team ("BCT") of the dispute. The Project Coordinators shall attempt to resolve the dispute informally for a period of fourteen (14) calendar days.

2. If the Project Coordinators do not resolve the dispute within fourteen (14) calendar days of Respondent's notification of EPA and the BCT of the dispute, the dispute shall be submitted to the BCT for resolution. The BCT shall attempt to resolve the dispute informally for a period of seven (7) calendar days. Any resolution of the dispute by the BCT shall be by the unanimous decision of BCT members.

3. If the BCT ceases to exist, fails, refuses or cannot for any reason perform the activities set forth in this Section, then Respondent shall be relieved of its burden to notify the BCT, and the Project Coordinators shall attempt to resolve the dispute informally for a period of twenty-one (21) calendar days.

4. If the dispute is not informally resolved pursuant to paragraphs 1-3 of this Section, and if the dispute regards a final workplan or report required pursuant to Section VII: Work to be Performed, Respondent may pursue the matter formally by placing its objections to the Initial Written Decision in writing. Respondent's written objections must be directed to the EPA Project Coordinator and may be carbon copied to the Director, Waste Management Division. This written notice must be mailed to such person within thirty (30) calendar days of Respondent's receipt of the Initial Written Decision. Respondent's written objection must set forth the specific points of the dispute, the position Respondent claims should be adopted as consistent with the requirements of this Order, the basis for Respondent's position, and any matters which it considers necessary for EPA's determination. If Respondent fails to follow any of the requirements contained in this paragraph then it shall have waived its right to further consideration of the disputed issue.

5. EPA and Respondent shall have 15 calendar days from EPA's receipt of Respondent's written objections to attempt to resolve the dispute. This Negotiation Period may be extended by

EPA for good cause. During such Negotiation Period, Respondent may request a conference with the Director of the Waste Management Division, to discuss the dispute and Respondent's objections. EPA agrees to confer in person or by telephone to resolve any such disagreement with the Respondent as long as Respondent's request for a conference will not extend the Negotiation Period.

6. If the parties are unable to reach an agreement within the Negotiation Period, EPA shall provide to Respondent its written decision on the dispute (EPA Dispute Decision). Such decision shall be incorporated into and become an enforceable element of this Order. Should EPA elect to bring an action to enforce the conditions of this Order, the provisions at 40 C.F.R. Part 22 shall apply.

7. The existence of a dispute as defined in this Section and EPA's consideration of matters placed into dispute shall not excuse, toll, or suspend any compliance obligation or deadline required pursuant to this Order during the pendency of the dispute resolution process.

8. Nothing in this section shall prevent the parties from informally resolving the dispute during the activities in paragraphs 1-7, above. If the dispute is resolved during the activities described in this Section, Respondent shall notify EPA's Project Coordinator, in writing, of its withdrawal of the dispute.

XVI. PENALTIES FOR NONCOMPLIANCE

The failure or refusal to carry out any term of this Order in a manner deemed satisfactory to EPA may subject Respondent to a civil penalty in an amount not to exceed $25,000 for each day of noncompliance with this Order in accordance with Section 3008(c) and (h) of RCRA, 42 U.S.C. Section 6928(c) and (h).

XVII. RESERVATION OF RIGHTS

1. EPA expressly reserves all rights and defenses that it may have, including the right both to disapprove of work performed by Respondent pursuant to this Order and to request that Respondent perform tasks in addition to those stated in Section VII: Work to be Performed.

2. EPA hereby reserves all of its statutory and regulatory powers, authorities, rights, and remedies, both legal and equitable, which may pertain to Respondent's failure to comply with any of the requirements of this Order, including without limitation the assessment of penalties under § 3008(c) and (h)(2) of RCRA, 42 U.S.C. § 6928(c) and (h)(2). This Order shall not be construed as a covenant not to sue, release, waiver, or

limitation of any rights, remedies, powers, and/or authorities, civil or criminal, which EPA has under RCRA, CERCLA, or any other statutory, regulatory, or common law authority of the United States. Nothing in this section shall diminish, impair, or otherwise adversely affect the authority of EPA to enforce the provisions of this Order.

3. Compliance by Respondent with the terms of this Order shall not relieve Respondent of its obligation to comply with RCRA or any other applicable State and Federal law or regulation including without limitation, any conditions of a permit issued under RCRA or any other applicable State or Federal laws or regulations by EPA, the State of South Carolina, or any other entity.

4. This Order shall not limit or otherwise preclude EPA from taking additional enforcement action pursuant to Section 3008(h) of RCRA or other available legal authorities should EPA determine that such actions are warranted.

5. EPA reserves the right to perform any portion of the work set forth herein or any additional site characterization, feasibility study, and remedial work as it deems necessary to protect human health and/or the environment.

6. If EPA determines that activities in compliance or noncompliance with this Order have caused or may cause a release of hazardous waste or hazardous constituent(s), or a threat to human health and/or the environment, or that Respondent is not capable of undertaking any of the work ordered, EPA may order Respondent to stop further implementation of this Order for such period of time as EPA determines may be needed to abate any such release or threat and/or to undertake any action which EPA determines is necessary to abate such release or threat.

7. This Order is not intended to be nor shall it be construed to be a permit. EPA's approval of any workplan does not constitute a warranty or representation that the SOW or workplans will achieve the required cleanup or performance standards. Compliance by Respondent with the terms of this Order shall not relieve Respondent of its obligations to comply with RCRA, CERCLA or any other applicable local, State, or federal laws and regulations, including but not limited to its obligation to obtain and comply with any federal, state, county or local permit nor is this Order intended to be, nor shall this Order be construed to be a ruling or determination on, or of, any issue related to any federal, state, county or local permit.

XVIII. OTHER CLAIMS

Nothing in this Order shall constitute or be construed as a release from any claim, cause of action, demand, or defense in

law or equity, against any person, firm, partnership, or corporation for any liability it may have arising out of or relating in any way to the generation, storage, treatment, handling, transportation, release, or disposal of any hazardous constituents, hazardous substances, hazardous wastes, pollutants, or contaminants found at, taken to, or taken or migrating from the Facility.

XIX. OTHER APPLICABLE LAWS

All actions required to be taken pursuant to this Order shall be undertaken in accordance with the requirements of all applicable local, state, and Federal laws and regulations. Respondent shall obtain or cause its representatives to obtain all permits and approvals necessary under such laws and regulations.

XX. SUBSEQUENT MODIFICATION

1. This Order may be amended by EPA to ensure protection of human health and the environment. Such amendments shall be in writing, shall have as their effective date the date on which they are signed by EPA, and shall be incorporated into this Order.

2. Any reports, plans, specifications, schedules, and exhibits required by this Order are, upon approval by EPA, incorporated into this Order. Any noncompliance with such EPA-approved reports, plans, specifications, schedules, and attachments shall be considered a violation of the requirements of this Order and shall subject the Respondent to the statutory penalty provisions referenced in Section XVI: Penalties for Noncompliance, of this Order and other sanctions.

3. No informal advice, guidance, suggestions, or comments by EPA regarding reports, plans, specifications, schedules and other writing submitted to Respondent will be construed as relieving of Respondent of its obligation to obtain written approval, if and when required by this Order.

XXI. SEVERABILITY

If any provision or authority of this Order or the application of this Order to any party or circumstance is held by any judicial or administrative authority to be invalid, the application of such provisions to other parties or circumstances and the remainder of the Order shall remain in force and shall not be affected thereby.

XXII. TERMINATION AND SATISFACTION

The provisions of this Order, with the exception of Section XIII: Record Preservation, shall be deemed satisfied upon Respondent's receipt of written notice from EPA that Respondent has demonstrated, to the satisfaction of EPA, that the terms of this Order, including any additional tasks determined by EPA to be required pursuant to this Order, or any continuing obligation or promises have been satisfactorily completed.

XXIII. SURVIVABILITY/PERMIT INTEGRATION

Subsequent to the issuance of this Order, a RCRA permit may be issued to the Facility incorporating the requirements of this Order by reference into the permit. No requirement of this Order shall terminate upon the issuance of a RCRA permit unless (1) the permit is issued by EPA, and (2) the permit specifically provides for termination of a requirement of this Order, and (3) the requirement is expressly replaced by equivalent or more stringent requirements in the permit.

XXIV. EFFECTIVE DATE

This Order shall become effective as provided in Section 3008(h) of RCRA, 42 U.S.C. § 6928(h), and the "Rules Governing Issuance of and Administrative Hearings on Interim Status Corrective Action Orders," 40 C.F.R. Part 24.

IT IS SO ORDERED:

DATE: September 27, 1995

BY: James S. Kutzman

James S. Kutzman
Associate Director
Waste Management Division
United States Environmental
Protection Agency
Region IV